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सूचना एवं प्रौद्योगिकी प्रभाग /IT Division
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नई दिल्ली -११०००१ /New Delhi-110001

3(9)/2022/IT/

Date: 22.12.2022

Sub: Invitation for Industry Feedback and Budgetary quote on draft Technical specification for The Supply, Installation, Testing, and Commissioning (SITC) of Data Center (DC) with Five year onsite warranty.

Kindly find attached here with the draft-technical specification for the Supply, Installation, Testing, and Commissioning (SITC) of Data Center (DC) with Five year onsite warranty.

2. It is hereby notified that, industry feedback and financial quotes on the draft technical Specification are invited from the Bidders.

The responses are to be emailed to: ddgit@prasarbharati.gov.in latest by 04-01-2023.

mbh
P. Ravindran

(Ravindran TP)
AE (IT)

To:-

All Concerned



BID DOCUMENT

For

**The Supply, Installation, Testing, and Commissioning (SITC) of Data Center (DC) with
Five year onsite warranty**

**Location: DC setup to be established at
AIR NBH, New Delhi,
Parliament Street,
New Delhi-110001**

Date:

1.1 On behalf of the Prasar Bharati (India's Public service Broadcaster), ADG (NZ), AIR&DD, invite Bids through GeM Portal for SITC Data Center (DC) to be set up at AIR, NBH New Delhi

1.2 Scope of Work:

The selected Bidder has to set up a Data Center (DC) with computing, storage, cooling systems as per the Bill of material that includes supply, installation, Testing and commissioning including configuration of operating systems, and all the licenses with the following provisions:

- To enable distribution or exchange of program content of both audio and video with different Stations and Kendras of AIR and DD all over India.
- The proposed data Centre shall also be used for data backup and disaster recovery of the services hired by Prasar Bharati through cloud.
- The proposed data Centre shall also have provisions for running older versions of monolithic applications being used by Prasar Bharati.

1.2.1 To meet above mentioned requirements following provisions are required to be made:-

1.2.1.1 Computing resources and storage.

1.2.1.2 The License for software requirement, such as Window server OS, MS SQL

server, Backup device, Backup Software and type-1 hypervisor for virtualization.

1.2.1.3 The License of business continuity software to run on emergency standby provisioning for the cloud based applications used by the IT division, Prasar Bharati, for automatic replication and provisioning of scheduled data backup.

1.2.1.4 The selected Bidder shall provide two number of 42 U smart racks with adequate cooling and power supply backup required for all computing storage, and any other appliance installed in the Data Center for smooth running. All the offered equipment shall fit-in these racks with 1+1 redundancy.

1.2.1.5 Configuration, Installation and Training.

Prasar Bharati will provide space for erection of two number of 42U Racks, along with ambient cooling systems as well as power backup system.

1.3 Eligibility Criteria:

| Sl No. | Criteria | Description | Required Documentary proof |
|--------|---|---|--|
| 1 | The Bidder shall be a registered Entity | The Bidder shall be registered under Companies Act, 1956 or Companies Act 2013 or a Partnership firm / LLP registered in India under Partnership Act 1932/2008 as amended and should have been in operations in India in the last 3 Years | Certificate of Incorporation and Memorandum / Articles of Association |
| 2 | Average Annual Turnover | Average Annual turnover of 300 Crores in the last 03 financial year. | Annual report (audited balance sheet and profit & loss account) of the relevant period, duly authenticated by a Chartered Accountant/ Cost Accountant in India |
| 3 | Work Experience | One Similar work of minimum value of 80% of estimated cost of the project or Two Similar works of minimum value of 60% of the estimated cost of project or Three Similar works of minimum value of 40% of the estimated cost of project <i>Note: Similar works will be defined based on scope of the work. Similar works may be executed with any Central and State Government agency, PSUs, Private organizations in last five years.</i> | Proof of Award of work (Self – certified with relevant documents) |
| 5 | Non – Blacklisting Certificate | The bidder should not have been blacklisted /debarred by any Governmental / Non – Governmental Organisation in India as on bid submission date | Self-Declaration certificate is to be attached. |
| 6 | Certification | The Bidder should have valid ISO 9001: ISO 27001 (relevant certification based on type of work) valid as on bid submission | Self-certified copies to be attached. |

1.4 Technical Requirement:

| Bill of Material | | | |
|------------------|---|----------------------------------|--------------------|
| S.No | Item | Quantity & Unit of Measure (UOM) | Compliance Yes/ No |
| 1 | Supply, Installation, Testing and Commissioning of Data Center with 5 year onsite Warranty. | 1 Set | |

| Details of Items | | | |
|------------------|--|--------------------------------|--|
| S.No | Item | Quantity & Unit of Measurement | |
| 1 | SAN Storage 100 TB | 1No. | |
| 2 | NAS Storage 500 TB | 1No. | |
| 3 | Server Load Balancer | 1 No. | |
| 4 | 24 ports POE Switch | 4 Nos. | |
| 5 | SAN Switch | 2 Nos. | |
| 6 | Next Generation Firewall | 2 Nos. | |
| 7 | Layer 3 Switch | 2 Nos. | |
| 8 | Server | 4 Nos. | |
| 9 | 10G Fiber SM Transceiver | 8 Nos. | |
| 10 | Smart Racks | 1 Set | |
| 11 | DC & DR Replication Software. | 1 Set | |
| 12 | Virtualization Software for 4 Servers | 1 Set | |
| 13 | MS Windows Server Standard 2022 (16 Core) | 4 Nos. | |
| 14 | MS SQL Server 2019 Standard (2 Core) License CSP ESD (Perpetual) | 4 Nos. | |
| 15 | 50TB Backup Appliance with Backup Software | 1 Set. | |
| 16 | Installation and commissioning | 1 Set | |
| 17 | Training to staff | 1 set | |
| 18. | Warranty onsite. | 5 years | |

Detailed Specifications are as below:-

| Item No.1 Technical Specifications of the SAN Storage | | | |
|---|---|--|--------------------|
| S.No | Technical Specifications | | Compliance Yes/ No |
| 1 | Data Availability | 1. Offered storage shall be an enterprise storage array & 100% data availability guaranteed architecture. Shall be published as enterprise array on the vendor web site. | |
| | | 2. 100% data availability guaranty shall be clearly mentioned on vendor web site for the offered model. If vendors are not supporting the 100% data availability as per their web site then vendor shall quote additional Controller and 10% additional capacity as cold spare along with array for mitigating the failure situations. | |
| 2 | Operating System & Clustering Support | The storage array should support industry-leading Operating System platforms & clustering including: Windows Server 2019 / 2022, VMware 7, and Linux etc. | |
| 3 | Capacity Scalability & | 1. Offered Array shall be scalable to at-least 500TB native raw capacity in a single storage system. | |
| | | 2. Offered array shall support at-least 200 drives. | |
| | | 3. Offered Storage array shall be supplied minimum with 100TB Usable Capacity using 30% SSD disk and 70% NL-SAS drives and shall be configured in Raid 6. | |
| | | 4. Offered storage shall support both SSD and HDD. HDD shall support both SAS and NL SAS drives. | |
| 4 | Storage Encryption | 1. Vendor shall offer only the encrypted drives with appropriate encryption licenses and shall meet FIPS 140-2 – Level 2 security requirements. Vendor shall not offer any controller based or Software based encryption. | |
| 5 | No. of Controllers | Offered Storage array shall be offered with at-least dual controller and all offered controllers shall be connected to a common backplane instead of loosely connecting to SAN Switches, Ethernet Switches or InfiniBand switches. | |
| 6 | Cache and CPU Processing Power | 1. Offered Storage array should have at-least 256GB Global protected DRAM cache. | |
| | | 2. DRAM Cache shall be completely dynamic for read and write ratios and operations and vendor shall not offer any additional card / module / drive for write cache operations. | |
| | | 3. Offered storage shall be based upon latest generation Intel CPUs, minimum skylake series, and shall be supplied with at-least 20 numbers of CPU cores. | |
| 7 | Processing Power - Parallel processing engine | 1. Offered Storage shall have dedicated, separated parallel processing engines, apart from CPU cores for effectively handling Raid-Rebuilding and data striping, thin re-claim etc. | |
| | | 2. Storage array shall be supplied with at-least 2 dedicated above processing engines either in the form of ASICs or other equivalent technologies. | |
| | | 3. If vendor doesn't support above critical feature, then additional 16 CPU Cores shall be supplied. | |
| 8 | Architecture & Processing Power | 1. Controllers shall be true symmetric active-active so that a single logical unit can be shared across all offered controllers in symmetrical fashion, while supporting all the major functionalities like Thin Provisioning etc. | |

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| | | 2. Offered storage array shall have native virtualization support so that Raid can be carved out from a logical space instead of dedicating separate physical disks for each application. | |
| 9 | No Single point of Failure | Offered Storage Array shall be configured in a No Single Point of configuration including Array Controller card, Cache memory, FAN, Power supply etc. | |
| 10 | Cloud Native data console Management - Life Cycle | 1. Management application shall be truly cloud native so that there shall be no need to configure, upgrade, patching of management application during the life-cycle of support contract and shall be offered as a service. | |
| | | 2. In case, vendor need any additional service like clustering / federation for managing multiple arrays from a single console and doesn't have cloud native data console – then all required accessories like dual Ethernet switches, cables, at-least dual management server in HA etc. shall be provided upfront for at-least 16 arrays. | |
| 11 | Host Ports and Back-end Ports | 1. Offered Storage array shall have minimum of 8 x 32Gbps Fiber Channel ports & 8 x 25Gbps iSCSI ports. All offered ports shall have capability to work at line speed and fully populated with media. | |
| | | 2. Offered Storage array shall have minimum of 16 SAS PCI lanes in the back-end for disk connectivity running at 12Gbps speed. | |
| 12 | Investment Protection | Offered storage array shall provide data in place upgrade to next generation model non-disruptively without any downtime to at-least 2TB Cache. | |
| 13 | Global Hot Spare | 1. offered Storage Array shall support distributed Global hot Spare for offered Disk drives. | |
| | | 2. Global hot spare shall be configure as per industry practice. | |
| 14 | Quality of service | It shall be possible to change the quality of service Response time, IOPS, bandwidth specification at real time. | |
| 15 | Firmware Upgrade | Offered storage shall support online non-disruptive firmware upgrade for both Controller and disk drives without any reboot of controller. | |
| 16 | Storage Management | Offered Storage array management console shall be able to manage at-least 8 arrays from a single console. Management console shall provide following functionalities: | |
| | | a. Common Dashboard for all managed arrays through a single management console. | |
| | | c. On-premise performance analysis, workload planning etc. through a single console. | |
| | | d. End to end connected topology view in pictorial format within management console, from Hypervisor to Storage arrays. At-least one of the hypervisor among VMware of Hyper-V shall be qualified. | |
| | | e. In case, vendor need any additional service like clustering / federation for managing multiple arrays from a single console – then all required accessories like dual Ethernet switches, cables shall be provided upfront for at-least 8 arrays. | |
| 17 | Integration - VMWARE | 1. Offered storage array shall be tightly integrated with VMware and shall be certified for VVOL. Shall provide following functionalities for VVOL | |
| | | 2. Shall be certified for vVol based replication | |
| 18 | Remote Replication | 1. Offered Storage array shall support both Synchronous and Asynchronous replication across 2 storage arrays natively without using any third party or software based solution. | |

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| | | 2. Offered Storage array shall support at least 2 Data center solution natively where Primary site shall be able to replicate synchronously to near-by / Bunker location and at the same time shall be able to replicate to Far location asynchronously. | |
| 19 | Active / Active Stretch Clustering | 1. Offered Storage array shall have capability to provide true Active / Active Replication and Stretch clustering at metro distances for Zero RPO and RTO so that a given volume pair between primary and DR location can have concurrent access to both read and write operations simultaneously. | |
| | | 2. Active / Active replication shall be supported for all well-known OS like VMware, Redhat, Windows etc. | |
| 20 | Multi-tenancy | Offered storage array shall be true multi-tenant and shall support more than 256 Tenant per storage array. Every tenant shall be treated as a separate logical storage array with its own user control access. Storage, Server and SAN Switch, NAS Backup appliance should be from same OEM for better compatibility. | |
| 21 | Warranty | 5 Years | |

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Item No.2 Technical Specifications of the NAS Storage

| S.No | Technical Specifications | |
|--|-------------------------------------|--|
| 1 | Rack mount | NAS Controller Should be rack mounted with a form factor of not more than 2U. Storage, Server and SAN Switch, NAS and Backup appliance should be from same OEM for better compatibility. |
| 2 | Processor | Dual processor of octa Core each running at 2.8 Ghz or more. |
| 3 | Memory | 32GB Dual Rank x8 DDR4-3200 Registered Smart Memory or higher, scalable to 256GB DDR4 RAM |
| 4 | Hard Drives & Capacity | Shall be supplied with minimum of 500 TB Usable with NL-SAS drives in Raid 5. |
| | | Offered NAS Storage shall have separate dedicated 400GB or more SSD drives for Operating system in Raid 1+0. |
| 5 | Storage expandability | 1. Offered NAS controller shall support at-least 24 internal LFF Slots and shall be offered with at-least 28 LFF Slots. |
| | | 2. Offered storage shall also have capability to attach additional drive enclosures. |
| 6 | Network Connectivity | Min. 4 X 1Gbps & 4x10Gbps auto sensing NICs ports and shall be further scalable to additional 8 numbers of 10Gbps ethernet port. All ports shall be fully populated with media |
| 7 | Protocols support | ISCSI, FTP, FTPS, CIFS/SMB 3.1.1, HTTP, HTTPS, NFS 4.1, WebDev etc. |
| 9 | Fault Tolerance for internal drives | Offered NAS shall support Raid 0, Raid 1, Raid 1+0, Raid 5 and Raid 6 for internal drives. Offered Raid controller shall have minimum of 4GB flash back write cache. |
| 10 | Fault Tolerance for external drives | Offered NAS shall support Raid 0, Raid 1, Raid 1+0, Raid 5 and Raid 6 for external drives. Supported Raid controller shall have minimum of 4GB flash back write cache. |
| 11 | Network Client Types Support | Should support Windows 10, Windows 2019 / 2022 , AIX, SOLARIS, Linux etc. |
| 12 | Operating System | Microsoft Windows Server IOT 2019 – 64 bit edition (NAS optimized) including powered OS drivers |
| 13 | De-duplication | Offered NAS shall have block based De-duplication which can be enabled for for all required volumes. De-duplication engine shall have: |
| | | 1. Flexibiity to decide the multiple schedules when de-duplication process can be run. |
| | | 2. Flexibility to limit the time period of de-duplication process so that production operations remains intact. |
| | | 3. Flexibility to bypass the recent files under the de-duplication process so that production operations remains intact. |
| | | 4. License for De-duplication shall be provided. |
| 5. Shall support more than 64TB of file system for de-duplication. | | |
| 14 | File screening and quota management | 1. Offered NAS shall have support for file screening so that administrator can ensures that users shall not be able to store unwanted files on offered NAS device. |
| | | 2. Offered NAS shall have Quota management for both Volume and Directory. |
| | | 3. Software for both File screening as well as Quata management shall be provided. |
| 15 | File Management | 1. Shall have flexibility to expire or move files to different folder / Location / Volumes / drives on the basis of polices like day of creation / modification / access of on the basis of file pattern like extension. |

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| | | 2. Shall also be able to expire or move files to different folder / Location / Volumes / Drives on the basis of content classification within files. | |
| 16 | SAN storage (iSCSI based) | Integrated iSCSI for block access over LAN. | |
| 17 | Snapshots | Point in time copies of your data to guard against data corruption. | |
| 18 | Encryption and compression | Shall have support for encryption and Compression. License for both of same shall be offered. | |
| 19 | Replication | Offered NAS shall also be supported with leading NAS replication software in the industry and shall also have 100TB license for replication through DFS-R | |
| 20 | Web Based Management | Shall have web based interface to manage and monitor system health, capacity, performance, hardware events, quotas, snapshots, authentication and network services | |
| 21 | Capacity Insights | Capacity planning with a granular historical utilization dashboard with growth rate and usage trends | |
| 22 | Power Supply and FAN | Offered NAS shall also have Hot Plug redundant power supply and FAN | |
| 23 | Warranty | 5 years onsite. | |

Item No.3 Technical Specifications of Server Load Balancer

| S.No | Technical Specifications | | |
|------|--|--|--|
| 1 | The proposed solution should be a dedicated appliance as ADC not as add on license Feature on NGFW and WAF. | | |
| 2 | The Appliance should have dedicated 4x1GbE copper ports, 2x10GbE SFP+ ports and support 18K RSA SSL TPS for 2048 key and 14K ECC SSL TPS and L7 RPS 2 Million and L4 CPS 1.5 Million from day 1. | | |
| 3 | The appliance should have dedicated SSL Acceleration hardware card for handling SSL Traffic. The SSL traffic should not be process by CPU of the appliance | | |
| 4 | The solution should able to load balancer both TCP and UDP based applications with layer 2 to layer 7 load balancing including WebSocket and WebSocket Secure. | | |
| 5 | The solution using e-policy then shall support algorithms including round robin, least connections, shortest response, persistence ip, hash ip, hash ip and port, consistent hash ip and snmp | | |
| 6 | The solution shall provide application & server health checks for well-known protocols such as ARP, ICMP, TCP, DNS, RADIUS, HTTP/HTTPS, RTSP etc.. | | |
| 7 | The solution should provide full ipv6 support and OEM shall be IPv6 ready logo certified. OEM shall be listed vendor for ipv6 phase-2 certification. | | |
| 8 | The solution shall support site selection feature to provide global load balancing features for disaster recovery and site redundancy and It shall support advance functions Authoritative name sever, DNS proxy/DNS NAT, full DNS server with DNSEC, DNS DDOS, application load balancing from day one. It shall be capable of handling complete Full DNS bind records including A,MX, AAAA, CNAME, PTR, SOA etc. | | |
| 9 | The solution shall provide comprehensive and reliable support for high availability and N+1 clustering based standard VRRP RFC 2338 on Per VIP based Active-active & active standby unit redundancy mode and shall support for multiple communication links for Realtime configuration synchronizations including HA group, gateway health check, decision rules, SSF sessions etc.. and heartbeat information | | |
| 10 | the solution shall support Stateful session failover with N+1 clustering support when deployed in HA mode. The solution shall support USB based FFO cable to synchronize configuration at boot time of HA | | |
| 11 | Warranty 5 Years onsite. | | |

| Item No.4 Technical Specifications of the 24 ports POE Switch | | |
|---|--|--|
| S.No | Technical Specifications | |
| 1 | Type of Switch | Managed |
| 2 | Technology | PoE+ |
| 3 | Number of 1G Copper Ports | 24 |
| 4 | Number of 1 G SFP Port (Uplink) | 4 |
| 5 | Console Port | Available |
| 6 | Switching Capacity-Non Blocking (Gbps) | >=56 |
| 7 | Throughput (MPPS) | >=41 |
| 8 | Management features | CLI and web/ GUI management features shall be available. |
| 9 | IPv6 | Yes |
| 10 | PoE Power Budget (Watt) | 370 or above |
| 11 | Power Supply | Dual |
| 12 | Ports | All ports shall be fully populated with media. |
| 13 | On Site OEM Warranty | 5 Years onsite. |

| Item No.5 Technical Specifications of SAN Switch | | |
|---|---|--|
| S.No | Technical Specifications | |
| 1 | PERFORMANCE : Auto- sensing 16 Gbps FC | |
| 2 | PORTS : 24 Fiber port activated from day-1 and scalable to 48 Ports | |
| 3 | SWITCH BANDWIDTH : Minimum 512 Gbps (full duplex) | |
| 4 | PROTOCOL SUPPORT : Fiber Channel | |
| 5 | HIGH AVAILABILITY : Hot Plug, non-disruptive software upgrades, Redundant power supply | |
| 6 | MANAGEMENT: Quick Configuration Wizard / CLI Management. Switch managed over 10/100 | |
| 7 | MEDIA TYPE : SFP, (Required FO patch cords to be supplied for complete connectivity as per solution architecture) with two number of spare fibre patch codes. | |
| 8 | NETWORK SERVICE : Up to 16 Virtual SAN, Fiber Channel ping and port level statistics | |
| 9 | FABRIC SERVICE : Name Service, Registered State Change Notification. | |
| 10 | Dual Port Power Supply | |
| 11 | Warranty 5 years onsite. | |
| Item No.6 Technical Specifications of Next Generation Firewall | | |
| S.No | Technical Specifications | |
| 1 | Must have a 64-bit hardware platform & based on Multi-Core Architecture with fast path network flows for excellent throughput for all your key processes. | |
| 2 | Proposed solution shall have Testing & Certification under Indian Telegraph Rules from TEC. | |
| 3 | Firewall shall have dual gateway antivirus engine one must be from Gartner leader quadrant AV vendor Required | |
| 4 | Two-factor authentication (One-time-password) support for administrator access, user portal, IPsec and SSL VPN administrator access 1000 License shall be provided from day one. Full command-line-interface (CLI) accessible from GUI Configuration change tracking | |
| 5 | Next-Gen Firewall appliance shall have minimum preinstalled 4 GbE copper ports , 4 x SFP+ 10 GbE fiber flexible to use any port as LAN, WAN, or DMZ ports and shall have expansion slots to include additional port modules to accommodate SFP+ (10Gig) to meet organization's future requirements or shall come with these specified ports from day one. | |
| 6 | All firewall interface ports shall be fully populated with media. | |
| 7 | Firewall (NGFW) shall have 500 GB or higher SSD for storage and 32 GB or higher RAM to handle peak Traffic. | |
| 8 | NGFW throughput 20 Gbps, Threat Protection throughput 6 Gbps, IPS throughput 25 Gbps, | |
| 9 | 15 million Concurrent sessions, 350,000 New Sessions/second | |
| 10 | Firewall shall have capability to monitor ISP link quality in terms of latency, jitter, packet loss and session information captured on firewall policies feature to create SLA profile with jitter/Latency/Packet Loss. And same may be demonstrated by OEM/Vender in post bid POC if required. | |
| 11 | Proposed solution shall have Advanced Threat Protection capability to Detect and block network traffic attempting to contact command and control servers using multi-layered DNS, AFC, and firewall. | |
| 12 | Web protection feature shall have URL Filter database with millions of sites across 95+ dozens of categories and file type filtering by mime-type, extension and active content types (e.g. Activex, applets, cookies, etc.) | |
| 13 | Proposed firewall shall have control over application traffic based on category/individual application, technology and risk level. | |
| 14 | TLS inspection support for TLS 1.3 with no downgrading, port agnostic polices, unique dashboard visibility, and compatibility troubleshooting | |
| 15 | Firewall must automatically/manually download important security patch updates like Anti-virus & IPS signatures on the scheduled intervals to stay up to date. Auto update to latest hot fixes during virus outbreak all this without rebooting appliance and shall have option to upload pattern offline. | |

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| 16 | Firewall shall support local Authentication and remote authentication servers like Active Directory, eDirectory, RADIUS, LDAP, Kerberos and TACACS+ Shall also include options for Client authentication agents for Windows, Mac OS X. Shall support Transparent (Single Sign On), proxy authentication (NTLM), client base and clientless authentication. | |
| 17 | Firewall shall support on-box reporting as cost effective solution using it's locally available storage, with minimum firewall resource utilized (CPU & Memory) during logging & reporting. Shall have pre-defined dashboards for Traffic, Security, and User behaviour analysis report. Granular Web & Application usage reporting, Network & Threats. | |
| 18 | Firewall shall be quoted with central management that help to Configure changes and apply them to a firewall, shall have option to Create a backup schedule and store in the management console and have option to schedule firmware updates. Proposed Management solution shall be from same OEM. | |
| 19 | Subscription license for Firewall, IPS, ATP, Anti-malware, Web and App visibility, control, and protection, 24x7 support, security and software updates, adv. exchange warranty for the period of licenses. | |
| 20 | Onsite Warranty/support and license for 5 years | |

Item No.7 Technical Specifications of the Layer 3 Switch

| S.No | Technical Specifications | |
|------|--|---------|
| 1 | Type of Switch | Managed |
| 2 | Number of 10/100/1000 Base-T Ports | 24 |
| 3 | Number of 10 G SFP+ Port (Uplink) | 4 |
| 4 | Management Port (RJ 45/RS 232/USB) | Yes |
| 5 | Console Port | Yes |
| 6 | Redundant Power supply | Yes |
| 7 | Operating System | Yes |
| 8 | Switching Capacity / Forwarding Bandwidth (Non Blocking / Line Rate /Wired Speed) 2x (Numbers of access ports + Number of Uplink Ports) (Gbps) | 128 |
| 9 | Throughtput / Forwarding Performance (MPPS) | 95 |
| 10 | IPv6 | Yes |
| 11 | On Site OEM Warranty (Year) | 5 Years |

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| 12 | Layer 3 features must be from day1 | Yes | |
| 13 | Ports | All ports shall be fully populated | |
| 14 | Management features | CLI and web/ GUI management features shall be available. | |
| Item No.8 Technical Specifications of Server | | | |
| S.No | Technical Specifications | | |
| 1 | CPU | Dual 22 core or higher processor. | |
| 2 | No. of CPU | Machine to be supplied with 2 Processors | |
| 3 | DIMM Slots | 32 DIMM slots which support RDIMM /LRDIMM memory kits | |
| 4 | Memory Configuration | 512 GB RAM shall be configured from day 1 and shall be scalable upto 2TB. | |
| 5 | Storage Controller | PCI Based Storage controller support RAID 0/1/5/6. | |
| 6 | Bus slots | Server shall support upto 3 PCI-Express 4.0 slots, at least two x16 PCIe slots | |
| 7 | HDD Required | 3x1200GB SAS 10K SFF BC MV HDD or higher | |
| 8 | Network | 1*Dual Port 10G SFP+Ethernet Card, 1*16G Dual Port FC HBA | |
| 9 | Interfaces | 5 standard USB 3.0 ports 1 front, 2 rear, 2 internal , 1 x VGA port | |
| 10 | Power | Dual Hot Pluggable. power supply | |
| 11 | Form Factor | 1U Rack | |
| 12 | System Security | UEFI Secure Boot and Secure Start support | |
| | | Immutable Silicon Root of Trust | |
| | | FIPS 140-2 validation (iLO 5 certification in progress) | |
| | | Common Criteria certification (iLO 5 certification in progress) | |
| | | Configurable for PCI DSS compliance | |
| | | Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser | |
| | | Support for Commercial National Security Algorithms (CNSA) | |
| | | Tamper-free updates - components digitally signed and verified | |
| | | Secure Recovery - recover critical firmware to known good state on detection of compromised firmware | |
| | | Ability to rollback firmware | |
| | | TPM (Trusted Platform Module) 2.0 option | |
| Bezel Locking Kit option | | | |
| Chassis Intrusion detection option | | | |
| 13 | Firmware Security | 1. For firmware security, system shall support remote management chip creating a fingerprint in the silicon, preventing servers from booting up unless the firmware matches the fingerprint. This feature shall be immutable | |
| | | 2. Shall maintain repository for firmware and drivers recipes to aid rollback or patching of compromised firmware. Shall also store Factory Recovery recipe preloaded to rollback to factory tested secured firmware | |
| 14 | Server Management | Software shall support dashboard view to quickly scan the managed resources to assess the overall health of the data center. It shall provide an at-a-glance visual health summary of the resources user is authorized to view. | |

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| | | <p>The Dashboard minimum shall display a health summary of the following:</p> <ul style="list-style-type: none"> • Server Profiles • Server Hardware • Appliance alerts <p>The Systems Management software shall provide Role-based access control</p> <p>Management software shall support integration with popular virtualization platform management software like Vmware vCenter & vRealize Operations, and Microsoft System Center & Admin Center</p> <p>Shall help provide proactive notification of actual or impending component failure alerts on critical components like CPU, Memory and HDD.</p> <p>Shall provide an online portal that can be accessible from anywhere. The portal shall provide one stop, online access to the product, support information and provide information to track warranties, support contracts and status. The Portal shall also provide a personalised dashboard to monitor device health, hardware events, and contract and warranty status. Shall provide a visual status of individual devices and device groups. The Portal shall be available on premise (at our location - console based) or off premise (in the cloud).</p> <p>Shall help to proactively identify out-of-date BIOS, drivers, and Server Management agents and enable the remote update of system software/firmware components.</p> <p>Shall have dashboard for firmware baselines while performing minimum required firmware checks and highlighting out-of-compliance devices for updates with the selected firmware baseline</p> <p>The Server Management Software shall be of the same brand as of the server supplier.</p> | |
| 15 | Indicators | System shall have feature of visual indicators (LED/LCD) for System Health, Network and Power in Front. | |
| 16 | OS and Virtualization System Support with Certification | Microsoft Windows Server | |
| | | Red Hat Enterprise Linux (RHEL) | |
| | | SUSE Linux Enterprise Server (SLES) | |
| | | VMware | |
| 18 | Redundancy | The System shall be supplied with Redundant Fans and Power Supplies. | |
| 19 | Accessories | All Required Connectors and cables to be proposed in BoQ, Storage, Server and SAN Switch, NAS, Backup appliance shall be from same OEM for better compatibility. | |
| 20 | Certifications | ACPI 6.1 Compliant | |
| | | PCIe 4.0 Compliant | |
| | | WOL Support | |
| | | Microsoft® Logo certifications | |
| | | PXE Support | |
| | | USB 3.1 Gen1 Compliant | |
| | | Energy Star | |
| | | SMBIOS 3.1 | |
| UEFI 2.6 | | | |

| | | | |
|----|----------|--|--|
| | | Redfish API | |
| | | IPMI 2.0 | |
| | | Secure Digital 2.0 | |
| | | Advanced Encryption Standard (AES) | |
| | | Triple Data Encryption Standard (3DES) | |
| | | SNMP v3 | |
| | | TLS 1.2 | |
| | | DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP) | |
| | | Active Directory v1.0 | |
| | | ASHRAE A3/A4 | |
| | | UEFI (Unified Extensible Firmware Interface Forum) | |
| 21 | Warranty | 5 Years onsite. | |

Item No.9 Technical Specifications of the 10G SM Transceiver

| S.No | Technical Specifications | | |
|------|-----------------------------|---------|--|
| 1 | Type of Transceiver | SFP | |
| 2 | SFP Mode | Single | |
| 3 | On Site OEM Warranty (Year) | 5 Years | |

Item No.10 Technical Specifications of Smart Rack

| S.No | Technical Specifications | | |
|------|--|--|--|
| 1 | Two Smart Rack Solution with total 7 KW cooling capacity (N+N) and UPS System 11 KVA (N+N) with 10 Minutes backup each. | | |
| 2 | (Smart Rack consisting of 42U Rack, cooling system, monitoring and UPS system) | | |
| 3 | 42U x 2 Nos.- 800 mm Wide x 2000mm Height x 1200mm Deep. Rack shall have base frame of 100mm height for stability. Load bearing capacity of rack frame shall be 1400 Kgs or more. Rack shall be made of CRCA sheet steel with minimum sixteen folded frame with 1.5 mm thickness. Rack front and rear door shall have PU gasket. Each rack shall have 2 Nos. vertical and 4 Nos. horizontal cable manager. | | |
| 4 | Each rack shall have 10 Nos. tool less banking frames of 1U size. | | |
| 5 | Required total 7 KW cooling capacity with redundancy N+N redundancy inclusive both racks. Cooling unit shall not consume any U space and mount vertically. Each cooling unit shall have 4 nos. fans. Cooling unit shall be mount inside the smart rack in vertical form within the side panel. | | |
| 6 | Racks shall have rodent repellent. | | |
| 7 | Rack front door shall have nine-digit electronic keypad system. Rack rear door shall be equipped with auto opening system. | | |
| 8 | Racks shall have water leak sensor. | | |
| 9 | Rack shall have provision to mount the cooling system inside in vertical form without consuming any u space. | | |
| 10 | IP PDU for Racks with minimum 24 Nos C13 & 4 Nos of C19 Sockets with industrial socket 32A single phase. Each rack required 2 Nos. IPDU. | | |
| 11 | Both racks are required smoke detection with NOVEC 1230 based suppression system. Common cylinder required for fire suppression medium. | | |

| | | |
|----|--|--|
| 12 | Required 11 Kva UPS (N+N) redundancy with 10 Minutes backup each, UPS and battery will be mount in smart rack. | |
| 13 | Rack, cooling system, smoke detection, IP PDU, Rear auto door opening system, front door access control, WLD and monitoring system (at least seven component) required from one OEM make for better services. Each rack with minimum 32U usable space. | |
| 14 | Any civil or Electrical work required for erection and fixing of smart racks will be responsibility of bidder. | |
| 15 | Onsite Warranty 5 Years | |

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| Item No.11 Technical Specifications of DC & DR Replication Software (on Cloud) for 50 Machine | | |
|--|---|--|
| S.No | Technical Specifications | |
| 1 | Key Features | |
| | 1. Offered software shall be based upon the foundation of Continuous Data Protection while supporting both local and remote data Protection. | |
| | 2. Offered software shall support both Backup and disaster recovery capabilities at on premise, at on premise DR location and Public cloud. | |
| | 3. Offered software shall be an IT Resilience Orchestration and Automation software and shall be able to provide SLA reports and RPO monitoring at all the times. | |
| | 4. Offered software shall provide automated failover and failback after initiating the DR execution as per defined policies. | |
| 2 | 5. Offered software shall be able to generate automated alert if RPO level increases beyond the prescribed limit. | |
| | Licensing | |
| | 1. Offered software licensing shall be based upon the number of protected VMs . Vendor shall provide the license for 50 Protected VMs. | |
| 3 | 2. License shall be agnostic to Virtualization platform and same offered license shall be able to protect VMs at on premise using VMware Virtualization, Microsoft Hyper-V virtualization. | |
| | 3. Vendor shall provide the license for all mentioned functionalities (Both Primary and DR) in the RFP document. | |
| | Supported Virtualization Platform | |
| 3 | 1. Offered Software shall be supported on following platform: | |
| | a) VMware Virtualization – vSphere. | |
| | B) Microsoft Hyper-V | |
| 4 | c) Major cloud service platforms such as Azure, Google , AWS, Oracle etc. | |
| | Always On Replication | |
| | Offered Software shall have in-built native capability of Always on Replication instead of using Snapshot / Clone technology for both local as well as DR data protection. | |
| | Offered Software shall not have any software agent within the given production virtual machines. | |
| 5 | Offered software shall have flexibility for delivering less than 10 second RPO for both Local data Protection as well as remote data Protection after excluding the link latency. | |
| | Offered software shall be able to create thousands of checkpoints, separated out by less than 10 seconds, for minimal RPO and RTO using Journal based or equivalent technology | |
| | Data Protection across Platforms | |
| 5 | Offered Software shall be true virtualization agnostic so that Protected VM can be VMware vSphere based and Recover VM can be either Hyper-V, major cloud platform- VMs or vis-à-vis or any cross-combination of platforms. | |
| | Offered software shall be true storage agnostic so that Primary copy and Backup / DR protection can be on heterogeneous storage. | |
| 6 | Application consistency | |
| | Offered Software shall have capability for creating Application consistent group for multi-VM application for data consistency during backup and recovery. | |
| | Offered software shall have capability for defining the boot order of the VMs within the application consistent group during the failover operation for reducing the overall RTO. | |
| | Offered software shall not put any limitation on the number of Application consistent groups or vendor shall support at-least 256 number of application consistent groups for data consistency. | |

| | | |
|----|--|--|
| | Offered Software shall not put any limitation on the number of VMs within the Application consistent groups or vendor shall support at-least 2048 VMs within application consistent groups for data consistency. | |
| | If required – Prasar Bharati shall be able to replicate the VMs within the application consistent group to multiple Application consistency groups for better data protection. It shall be possible for both Local data Protection as well as remote data protection. | |
| | Offered software shall be able to prioritize the replication of VMs traffic within the application consistency group as per organization need at low, medium and high level and shall do automatic bandwidth usage. | |
| | Application consistency group shall allow adhoc backup support (One time backup) either for entire consistency group or selected Virtual machines within the group. | |
| 7 | WAN Optimization | |
| | Offered software shall also support WAN optimization technologies like compression when protecting the information at DR location. | |
| | Offered software shall also have capability to switch ON / OFF the WAN optimization technology depending upon the type of VMs or application consistent group. | |
| 8 | Disaster Recovery (Failover) | |
| | Proposed Software shall have capability for doing Failover from Primary location to DR location in automated mode so that there shall no need to create the VM manually at DR location | |
| | Proposed software shall have capability for selecting the restore point or check-point, as per organization requirement, while doing the failover from Primary location to DR location. | |
| | Proposed software shall have capability for selecting the boot order of VM at DR location during failover process for minimizing the overall RTO | |
| | Proposed software have capability for configuring the reverse protection (DR to Primary location) after successful failover from Primary location to DR location. | |
| | Proposed software shall have flexible commit policy so that environment can be rolled back to Primary location if planned DR failover is not successful due to unforeseen event or any unknown reason. | |
| | Proposed software shall also have flexible commit policy in minutes to hours so that after failover operations can be thoroughly checked before announcing the successful failover. | |
| | For planned failover – Failover policy shall provide the flexibility to customer for shutting down the primary site virtualized environment for minimal RPO. | |
| 9 | Ransomware Protection | |
| | Offered software shall have strong mechanism for ransomware protection and shall be achieved with minimum RPO. | |
| | Offered software shall have capability for creating the checkpoint at every 5 second of data protection so that customer can select the required checkpoint while restoring the files during the ransomware attack and can achieve lowest RPO. | |
| | Offered software shall have capability for storing the latest data information, at-least for a month, on the faster storage devices of NVME or SSD and remaining day information on slowest media automatically. This is to ensure that recovery from ransomware attack is really quick. | |
| 10 | VM / Application consistency group restore | |
| | Offered software shall provide the flexibility for restoring the selected VM and Deleted VMs | |
| | While restoring the VMs / Deleted VMs – restore engine shall provide the flexibility for changing the IP address either using Static IP or DHCP IP scheme . | |
| | VM restoration engine shall provide the flexibility for changing the network setting during the restoration process. | |

| | | |
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| | Offered software shall also provide the flexibility for restoring the complete application consistency group | |
| | Reporting | |
| | Offered Software shall have in-built reporting engine and shall provide at-least following reports: In case vendor doesn't support the below reports then vendor shall ensure that appropriate commercialized IT Resilience Orchestration and Automation software is factored in the bid. | |
| 11 | Application consistency group performance reports – It shall clearly show the over data protection SLA (RPO) being achieved by the Application throughout the day along with IOPS, Throughput and wan bandwidth consumption | |
| | Recovery reports – It shall allow administrator to have recovery reports for Failover, failback, DR-drill, Successful backup and recovery, failed backups and recovery. | |
| | Resources report – It shall provide the resource reports consumed by VMs within the application consistency group | |
| | Data Protection Report – It shall provide the complete data protection report over a period of time | |
| | Management | |
| 12 | Offered software shall have GUI based management which shall shows critical parameters of Average RPO for the complete site, Number of VMs being protected, Number of Application consistency groups along with their status and health, Site topology, IOPS, WAN traffic, Compression, events and running tasks etc. | |
| 13 | Onsite Warranty & support 5 Years | |

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| Item No.12 Technical Specifications of Virtualization Software | | |
|--|--|--|
| S.No | Technical Specifications | |
| 1 | The proposed solution shall leverage any of industry standard hypervisor VMware ESXi/Microsoft Hyper-V/ KVM. | |
| 2 | The solution shall provide a purpose-built hypervisor with minimal footprint that installs directly on the 64-bit bare metal x86 server. | |
| 3 | Virtualization management software shall support user role and permission assignment (RBAC). | |
| 4 | Virtualization management software console shall maintain a record of significant configuration changes and the administrator who initiated them. | |
| 5 | The solution shall provide support for heterogeneous guest Operating systems such as Windows (Desktop & Server Operating System) and Linux (at least Red Hat, SUSE, Ubuntu and CentOS). | |
| 6 | Secures virtual machines with offloaded anti-virus and anti-malware solutions, without the need for agents inside the virtual machine. | |
| 7 | Single view of all virtual machines allows Monitoring of system availability and performance and automated notifications with alerts. Monitor analyse virtual machines, server utilization availability with detailed performance graphs | |
| 8 | Virtual Machine performance monitoring reports for performance and utilization of Virtual Machines. It shall co-exist and integrate with leading systems management vendors. | |
| 9 | Capabilities of Hot Add (CPU, Memory & devices) to virtual machines when needed, without disruption or downtime in working for both windows and Linux based VMs. | |
| 10 | High Availability capabilities for the VMs in the sense if in case one server fails all the Virtual machines running on that server shall be able to migrate to another physical server running same virtualization software. | |
| 11 | Virtualization software shall support live Virtual Machine migration between different generations of CPUs in the same cluster and without the need for shared storage option. | |
| 12 | License shall include 5 years 24x7 maintenance and support | |
| Item No.13 Technical Specifications of the MS Windows Server Standard 2022 (16 Core) (Perpetual) | | |
| S.No | Technical Specifications | |
| 1 | MS Windows Server Standard 2022 (16 Core) | |
| Item No.14 Technical Specifications of the MS SQL Server 2019 Standard (2 Core) License CSP ESD (Perpetual) | | |
| S.No | Technical Specifications | |
| 1 | MS SQL Server 2019 Standard (2 Core) License CSP ESD (Perpetual) | |

| Item No.15 Technical Specifications of Backup Appliance | | |
|---|---|--|
| S.No | Technical Specifications | |
| 1 | Offered Disk to disk backup device shall be a purpose built backup appliance and shall be certified to work with at-least 3 Backup application vendor ISV like Veeam and Commvault etc. | |
| 2 | Offered device shall be offered with Minimum of 50 TB Usable. | |
| 3 | Offered device shall have separate dedicated drives for Operating System of appliance and shall not participate in data backup. | |
| 4 | Offered device shall also be scalable to at-least 200TB usable capacity in native mode (Without de-duplication and compression) and additional 400TB of native usable capacity using storage on the cloud like AWS, Azure, Google, Oracle etc. or on object storage. | |
| 5 | Vendor shall not use any additional staging device in-between while moving the data from Disk based backup device to public cloud or object storage. | |
| 6 | Offered device shall be protected with hardware raid 6 from the factory so that no raid configuration is required in field. | |
| 7 | Offered device shall be configured with at-least one hot spare disk. | |
| 8 | Offered device shall support emulation of both VTL and NAS target like NFS & CIFS. | |
| 9 | Offered device shall have capability to do complete copy of data sets from on premise disk backup storage to Cloud storage instead of data tiering. | |
| 10 | Offered device shall have the ability to configure at-least combination of 64 tape Libraries & NAS targets along with 100,000 or more Cartridge slots in the single appliance. | |
| 11 | Offered device shall have capability to deliver selective restore from disk Library itself. | |
| 12 | Offered Device shall integrate and utilize customer's current tape backup infrastructure in the following aspects:- | |
| | Compatibility with the existing backup server / media servers at customer. | |
| | Compatibility with existing tape library and tape drives | |
| | Compatibility with existing backup software. Storage, Server, SAN Switch, NAS and Backup appliance shall be from same OEM for better compatibility. | |
| 13 | Offered device shall have integrated de-duplication license, low bandwidth replication license so that only unique non duplicated block transfers to remote / DR location. | |
| 14 | Offered device shall have intelligence to understand both source based and target based de-duplication and shall be integrated with all well-known backup ISVs. At-least 3 ISVs shall be supported. | |
| 15 | Offered device shall support receiving non duplicated data from remote locations or branch office directly from the application servers / Client servers in low bandwidth mode without using any backup or replication based device at remote location / Branch office. | |
| 16 | Ability to flexibly emulate tape drive/ tape formats LTO-Gen5, LTO-Gen6, and LTO-Gen7 etc. | |
| 17 | Offered device shall have Minimum of 4 x 10/25Gbps SFP IP ports & 4 x 32Gbps ports. License and SFP for all ports shall be offered and configured. | |
| 18 | Offered Appliance Fiber channel ports shall support connectivity of servers either directly or via SAN switches while supporting the both source and Target based de-duplication. | |
| 19 | Offered disk-based backup device shall also support encryption functionality. | |
| 20 | Offered disk-based backup device shall also support dual authorization for preventing disruptive operations so that hackers shall not be able to execute or complete all critical operations like deletion of backup store, changing system time etc. | |
| 21 | Dual authorization shall be approved by two separate accounts or entities instead of a single responsible account / entity so that all malicious actions such as ransomware attacks can be effectively prevented. | |
| 22 | Dual authorization shall be independent of Backup ISV being used in the environment. | |

| | | |
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| 23 | Offered disk-based backup device shall also support Secure erase feature for protecting against unauthorized recovery of deleted data. | |
| 24 | Offered disk-based backup appliance shall support VLAN tagging. Offered IP ports of same type shall also support Port bonding in Adaptive Load balancing as well as in Active-backup mode. Storage, Server and SAN Switch, NAS and Backup appliance shall be from same OEM for better compatibility. | |
| 25 | Offered device shall support rated write performance of at-least 25TB per hour. | |
| 26 | Offered Solution shall have 50 VMs Backup software License. | |
| 27 | Onsite Warranty and support- 5 Years | |
| Item No.16 Installation and Commissioning | | |
| S.No | Technical Specifications | |
| 1. | All the offered shall be integrated and configured in consultation with Prasar Bharati. | |
| 2. | Any other item required for proper functioning of the system is to be provided by the bidder. | |
| Item No.17 Training | | |
| S.No | Technical Specifications | |
| 1. | The bidder is to provide 5 days system administrative training to 10 persons for operation and maintenance of system. | |
| 2. | Training is to be provided on site. | |
| Item No.18 Warranty | | |
| S.No | Technical Specifications | |
| 1. | The complete solution provided shall be under onsite warranty for 5 years from the date of commissioning. | |
| 2. | The bidder is to provide escalation matrix for providing support and lodging complaints. | |
| 3. | The support shall be online/ physical, telephonic as well as by email for non-critical issues which shall be resolved within reasonable time. | |
| 4. | The response time shall be within 4 hours for critical items such as failure of servers , storage , smart rack's essential items and matter shall be resolved within next working day. | |
| 5. | During the warranty period all the upgrades and patches are to be provided free of cost along with subscription for Next Generation Firewall. | |
| 6. | All technical support shall be back-to-back from the OEM. | |
| 7. | During the warranty period if reported issues are not resolved within the prescribed timeline, a penalty equivalent to double the prorata per day of the performance bank guarantee (for 5 years) will be charged. If the matter is not resolved within one month without valid reason, the Performance Bank Guarantee will be forfeited. | |

1.5 General Terms and Conditions: All General Terms and Conditions mentioned on the GeM Portal shall be applicable.

1.6 Additional Terms and Conditions:

1.6.1 Each and every offered listed materials on the Bid shall be provided with make and Model of the equipment.

1.6.2 Any of the offered hardware/Software solution shall not be end of life within the currency of the contract. The same will be verified during the evaluation through the website of OEM.

1.6.3 The operational and maintenance details shall be available on the website of the OEM

1.6.4 Unconditional acceptance of all the terms and conditions of the bid including Additional

Terms and Conditions of the Bid shall be submitted by the bidder.

- 1.6.5** The Bidder shall submit Manufacturer Authorization Form (MAF) for all server, storage, backup solution, Next generation firewall and software licenses.
- 1.6.6** All domestic equivalent certifications shall also be acceptable against all the certifications mentioned for the items mentioned in the Technical Specification.
- 1.6.7** All Licences of the solutions shall be in the name of Prasar Bharati.
- 1.6.8 PAYMENT TERMS**
- 1.6.9** 70 % of the payment will be paid after on receipt of the invoice and successful delivery and inspection of items at site.
- 1.6.10** The balance 27 % of already supplied items along with 97% of the installation charges after completion of SITC.
- 1.6.11** The balance 3 % of the payment will be released on submission of Performance Bank Guarantee
- 1.7 Delivery Period:** Within 2 months from date of award of contract.
- 1.8 EMD:** **< 2% of the Estimated cost >** In case of seeking EMD Exemption, Bid securing declaration (Form-2) along with NSIC Certificate for MSME in the concerned category of the Tendered items, is to be uploaded.
- 1.9 Performance Security Deposit:** 3% of the value of the contract. Performance security shall be valid up to two months after completion of work /supply/end of guarantee whichever is later.
- 1.10 Estimated cost of the work:** **Rs. < >**.
- 1.11 EVALUATION METHODOLOGY:**
- 1.11.1** The responsive bids will first be evaluated for technical compliance. Non-submission of essential documents stipulated will result in a bid liable for disqualification at technical evaluation stage.
- 1.11.2** Bids determined to be substantially responsive will be checked by Technical Evaluation Committee of Prasar Bharati.
- 1.11.3** Price evaluation shall be as under: The “Schedule of Rates / Prices” quoted for complete scope of work /Supply inclusive of GST shall be taken up for evaluation, on overall Low Cost basis. Selection of the Bidder shall be through Reverse Auction (RA) method available on the GeM Portal.
- 1.11.4** Purchase Preference (Linked with Local Content): Applicable as per government guideline.
- 1.11.5** Bidder shall comply (Form-5) with restrictions on procurement under rule 144 (xi) vide order no: 06/18/2019-PPD dated 23rd July 2020 inserting Rule 144(xi) in GFRs 2017.

1.12 PREFERENCE TO MAKE IN INDIA

The policy of the Govt. of India to encourage “Make in India” and promote manufacturing and production of goods and services in India as per the revised “Public Procurement (Preference to Make in India), Order 2017”, circulated by the Department of Promotion of Industry and Internal trade, Ministry of Commerce & Industry, Govt. Of India vide Order No. P-45021/2/2017-PP (BE-II dated 16.09.2020, or latest order, if any, will be applicable for this tender. Bidder should comply with Preferential Market Access (PMA) order 2017, guidelines notified by DPIIT and DoT with all its clarifications / amendments, if applicable

1.13 INSPECTING/TESTING OF MATERIAL

The inspection of material will be carried out by the authority specified in the purchase order. The material will be accepted only after the same has been found satisfactory after inspection and duly marked and sealed by the Inspection Authority. The supplier/contractor shall ensure that the material to be supplied against this order shall be individually inspected, tested and analysed in terms of the specifications attached to the tender and the relevant codes and practices specified therein by expression or implication. Necessary test reports shall be provided as required.

1.14 SUBLETTING AND ASSIGNMENT

The contractor shall not save with the previous consent in writing of the purchase Authority, sublet, transfer or assign the contract or any part thereof or interest therein or benefit or advantage thereof in any manner whatsoever, provided nevertheless that any such consent shall not relieve the contractor from any obligation, duty or responsibility under the contract.

1.15 INTEGRITY PACT (Applicable for the Tender more than 2 Crores)

Signing of Integrity Pact (IP) is mandatory for every Bidder participating in this Bid (Tender value more than 2 Cr). A copy of the IP is enclosed (Form-4), which may be deemed to have been signed by Prasar Bharati. The Bidder(s) and Prasar Bharati shall be bound by the provisions of IP in case any complaint relating to the tender is found substantiated. The IP shall be executed on a plain paper and duly signed on each page by the same signatory who signs the bid document. Any bid not accompanied by duly signed IP by the Bidder would be rejected. Prasar Bharati has appointed the Independent External Monitor (IEM) nominated by Central Vigilance Commission (CVC). Contact detail of IEM is given in Form -4. Any tender related complaint, for tenders covered under Integrity Pact having value of Rs.2 (Two) crore and above, may be addressed to the Independent External Monitor (IEM).

2.0

ANNEXURE- 1(Form-1)

2.1 CHECK LIST

| SL. NO. | PARTICULARS | ENCLOSED | |
|---------|---|----------|----|
| | | YES | NO |
| 1 | Proof Of Company Resgistered Certificate of Incorporation and Memorandum / Articles of Association | | |
| 2 | Proof Of Being In The Business Of Data Centre - Proof of Award of work (Self – certified with relevant documents) | | |
| 3 | Proof Of Financial Turnover Of Last Three Years (50% of the contract Value)- Annual report (audited balance sheet and profit & loss account) of the relevant period, duly authenticated by a Chartered Accountant/ Cost Accountant in India | | |
| 4 | Proof Of ISO Certification (27001, 9001 Etc.) Self-certified copies to be attached. | | |
| 5 | Duly Signed Check List.-Form-1 | | |
| 6 | Bid securing Declaration Form-2 | | |
| 7 | Self-Certificate for Local Content as per Form-3 | | |
| 8 | Submission Of Integrity Pact as per Form-4 | | |
| 9 | Self-Declaration against the rule 144 (xi) in GFRs 2017- Form-5 | | |
| 10 | Photocopy Of Pan/ GSTIN | | |
| 11 | Submission Of Bank Details Cancelled Cheque For E - Payments | | |
| 12 | Submission Of Declaration Of Non-Blacklisting | | |
| 13 | Undertaking Of Unconditional Acceptance Of All Terms And Conditions Of Bid | | |
| 15 | Compliance to the Technical Requirement as per Para 1.4 | | |
| 16 | Manufacturer Authorisation Form (MAF) issued in respect of this Bid Number. | | |
| 17 | Technical Brochures of the offered products or link to OEMs website containing Technical Specification and details | | |
| 18 | Any Other Document/S Being Submitted (Please Specify) | | |
| 19 | | | |
| | | | |
| 21 | | | |
| 21 | | | |

2.2 BID SECURITY DECLARATION

Bid No.

Date_____

To (insert complete name and address of the purchaser)

I/We, the undersigned, declare that: I/We understand that, according to your conditions, a Bid Securing Declaration must support bids.

I/We accept that /We may be disqualified from bidding for any contract with you for a period of one year from the date of notification if I am /We are in a breach of any obligation under the bid conditions, because I/We

- i) have withdrawn/modified/amended, impairs or derogates from the tender, my/our Bid during the period of bid validity specified in the form of Bid; or
 - ii) Having been notified of the acceptance of our Bid by the purchaser during the period of bid validity
- a) Fail or reuse to execute the contract, if required, or
 - b) Fail or refuse to furnish the Performance Security, in accordance with the Instructions to Bidders.

I/we understand this Bid Securing Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of the receipt of your notification of the name of the successful Bidder; or thirty days after the expiration of the validity of my/our Bid.

Signed:

Name:

Capacity:

On behalf of (insert complete name of Bidder)

DATED ON----- DAY OF-----

(insert date of signing)

CORPORATE SEAL (WHERE APPROPRIATE)

(Note: In case of a Joint Venture, the Bid Securing Declaration must be in the name of all partners to the Joint Venture that submits the bid)

2.3 Self-Certificate for Local Content

*We [name of manufacturer] hereby confirm in respect of quoted item(s) that Local Content is equal to or more than 50% and come under ‘Class-I Local Supplier’ Category. As being ‘Class-I Local Supplier’, we are eligible for Purchase Preference under ‘Make in India’ Policy vide GoI Order no. P-45021/2/2017-PP (B.E.-II) dated 15.06.2017 (subsequently revised vide orders dated 28.05.2018, 29.05.2019, 04.06.2020 and 16.09.2020, or latest order, if any, will be applicable)

OR

*We [name of manufacturer] hereby confirm in respect of quoted item(s) that Local Content is more than 20% but less than 50% and come under ‘Class-II Local Supplier’ Category.

The details of the location(s) at which the local value addition made is/are as under:

1.....

2.....

3.....

*** Strike out whichever is not applicable**



ANNEXURE-4 (FORM-4)

[To be executed on plain paper and submitted along with bid/tender document for Bidders having a value of Rupees two crores or more.]

*To be signed by the Authorized Signatories of the Bidders and
Prasar Bharati*

2.4 INTEGRITY PACT

This pre-bid pre-contract Agreement, hereinafter called the INTEGRITY PACT, is made on this

_____ day of the month of _____, 20____. BETWEEN
CEO Prasar Bharati (Broadcasting Corporation of India), Prasar Bharati House, Copernicus Marg, New Delhi 110001 acting through ADG(E) Office Of ADG(E) North Zone All India Radio and Doordarshan, Jamnagar House, New Delhi 110011 hereinafter called the “Buyer”, which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns, on the one hand,

AND

M/s< _____ >,at address< _____ >
>acting through Sh.< _____ >

_____, Chief Executive Officer, hereinafter called the “BIDDER”, which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns, on the other.

PREAMBLE

WHEREAS the BUYER proposes to procure SITC of Data Center), hereinafter referred as SITC of Data Center” and has floated a tender Bid Number: GEM_____ Dated: 14-12-2021, hereinafter referred to as the “TENDER”, and the BIDDER/ SELLER is willing to offer/ has offered the SITC of Data Center and the BUYER intends to award a contract / purchase order / work order for the SITC of Data Center covered under the TENDER hereinafter referred to the “CONTRACT”,

AND WHEREAS the BIDDER/ SELLER is a company incorporated in India under Companies Act, 1956/2013 or a Partnership registered under Indian Partnership Act, 1932 or a Limited Liability Partnership (LLP) in India or Government undertaking or a Government Autonomous body and the BUYER is an Autonomous Organisation of the Government of India performing its functions on behalf of the President of India.

AND WHEREAS the BUYER has appointed Independent External Monitors (IEMs) to monitor

The TENDER process and the execution of the CONTRACT for compliance with the principles as laid down in this INTEGRITY PACT.

AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this INTEGRITY PACT, the terms and conditions of which shall also be read as integral part of the TENDER document and CONTRACT between the parties.

NOW, THEREFORE,

To avoid all forms of corruption by following a system i.e. fair, transparent and free from any influence / prejudiced dealing prior to, during and subsequent to the currency of the CONTRACT to be entered into with a view to:-

Enable the BUYER to obtain the Bid Number: GEM/2021/B/1751675 Dated: 14-12-2021 at a competitive price in conformity with the defined specifications by avoiding the high cost and distortionary impact of corruption on public procurement,

And

Enable the BIDDER/ SELLER to abstain from bribing or indulging in any corrupt practices in order to secure the CONTRACT by providing assurance to the BUYER that their competitors will also abstain from bribing and other corrupt practices,

And

Enable the BUYER to prevent corruption in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this INTEGRITY PACT and agree as follows:

1. Article 1 – COMMITMENTS OF THE BUYER

- 1.1 The BUYER undertakes that no official of BUYER, connected directly or indirectly with the CONTRACT/ TENDER or the BUYER personally or any of his family members will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favor or any material or immaterial benefit or any other advantage from the BIDDER/ SELLER, either for themselves or for any person, organization or third party related to the CONTRACT in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the CONTRACT.
- 1.2 BUYER will, during the pre-contract stage, treat all BIDDERS alike, and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER/ SELLER, which could afford an advantage to that particular BIDDER in comparison to the other BIDDERS.

1.3 The officials of the BUYER will report to the Independent External Monitor (IEM) with a copy to the Chief Vigilance Officer (CVO) any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

1.4 In case any such misconduct on the part of such official(s) of the BUYER is reported by the BIDDER to the BUYER with the full and verifiable facts and the same is prima facie found to be correct by the BUYER, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the BUYER and such a person shall be debarred from further dealings related to the CONTRACT process. In such a case, while an enquiry is being conducted by the BUYER, the proceedings under the CONTRACT would not be stalled, unless considered necessary.

2 Article 2 - COMMITMENTS OF THE BIDDER

2.1 The BIDDER commits himself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of the bidding or during any pre- contract or post-contract stage in order to secure the CONTRACT or in furtherance to secure it and in particular commits himself to the following:-

2.1.1 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favor, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official or family member of the BUYER, connected directly or indirectly with the Bidding Process, or to any person, organization or third party related to the CONTRACT in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.

2.1.2 The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favor, any material or immaterial benefit or other advantage, commission, fees, brokerage, or inducement to any official of the BUYER or family member of the BUYER or otherwise in procuring the CONTRACT or forbearing to do or having done any act in relation to the obtaining or execution of the CONTRACT or any other CONTRACT with the Prasar Bharati for showing or forbearing to show favor or disfavor to any person in relation to the CONTRACT or any other CONTRACT with Prasar Bharati.

- 2.1.3 BIDDER shall disclose the name and address of his agents and representatives and the Indian BIDDERS shall disclose his foreign principals or associates, if any.
- 2.1.4 BIDDER shall disclose the payments to be made by them to agents/ brokers or any other intermediaries, in connection with this TENDER/CONTRACT.
- 2.1.5 The BIDDER further confirms and declares to the BUYER that the BIDDER is the original manufacturer/ authorised partner of the <SITC of _____> and has not engaged any individual or firm or company whether Indian or foreign other than those Para 2.1.3 and Para 2.1.4 above, to intercede, facilitate or in any way to recommend to the BUYER or any of its functionaries, whether officially or unofficially to the award of the CONTRACT to the BIDDER.
- 2.1.6 The BIDDER will not collude with other parties interested in the CONTRACT to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the CONTRACT.
- 2.1.7 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
- 2.1.8 The BIDDER shall not use impropriety, for purpose of competition or personal gain, or pass on to others, any information provided by BUYER as part of the business relationship, regarding plans, technical proposal and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.
- 2.1.9 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.
- 2.1.10 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above in the sub clause of this Article2.
- 2.1.11 If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of the BUYER, or alternatively, if any relative of an official of the BUYER has financial interest/stake in the BIDDER`s firm, the same shall be disclosed by the BIDDER

at the time of filling of tender.

2.1.12 The term, relative "for this purpose would be as defined in Section 2(77) of the Companies Act, 2013.

2.1.13 The BIDDER shall not lend or borrow any money or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the BUYER.

3

Article 3 - PREVIOUS TRANSGRESSION, IF ANY, OF THE BIDDER

3.1 The BIDDER declares that no previous transgression has occurred in the last three years immediately before signing of this INTEGRITY PACT with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER's exclusion from the TENDER process.

3.2 The BIDDER agrees that if it makes incorrect statement on this subject, he can be disqualified from the TENDER process or the CONTRACT, if already awarded, can be terminated for such reason.

3.3 If the BIDDER can prove that he has resorted/ recouped the damage caused by him and has installed suitable corruption prevention system, the BUYER may, at his own discretion, as per laid down organisational procedures, revoke the exclusion prematurely.

Article 4 - SANCTIONS FOR VIOLATIONS

4.1 Any breach of the aforesaid provisions by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle the BUYER to take all or any one of the following actions, wherever required:-

4.1.1 To immediately call off the pre-contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER(S) would continue.

4.1.2 The Earnest Money Deposit (in pre-contract stage) and/or Security Deposit/ Performance Bond (after the CONTRACT is signed) shall stand forfeited either fully or partially, as decided by the BUYER and the BUYER shall not be required to assign

any reason there for.

- 4.1.3 To immediately cancel the CONTRACT, if already signed, without giving any compensation to the BIDDER.
- 4.1.4 To recover all sums already paid by the BUYER, and in case of an Indian BIDDER with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a BIDDER from a country other than India with Interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the BIDDER from the BUYER in connection with any other CONTRACT for any other stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.
- 4.1.5 To encash the advance bank guarantee and performance bond/ warranty bond, if furnished by the BIDDER, in order to recover the payments, already made by the BUYER, along with interest.
- 4.1.6 To cancel all or any other contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such cancellation/ rescission and the BUYER shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.
- 4.1.7 To debar the BIDDER from participating in future bidding processes of the Government of India/ BUYER for one to three years, which may be further extended at the discretion of the BUYER.
- 4.1.8 To recover all sums paid in violation of this INTEGRITY PACT by the BIDDER to any middlemen or agent or broker with a view to securing the CONTRACT.
- 4.1.9 In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the BUYER with the BIDDER, the same shall not be opened.
- 4.1.10 The BUYER will be entitled to take all or any of the actions mentioned at Paras 4.1.1 to 4.1.9 of this INTEGRITY PACT also on the Commission by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an offence as defined in Chapter IX of the Indian Penal code, 1860 or Prevention

of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

- 4.1.11 The decision of BUYER to the effect that a breach of the provisions of this INTEGRITY PACT has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the IEM(s) appointed for the purposes of this INTEGRITYPACT

5 Article 5 - INDEPENDENT MONITORS

- 5.1 THE BUYER has appointed an Independent External Monitor (hereinafter referred to as "MONITOR") for this INTEGRITY PACT in consultation with the Central Vigilance Commission (Addresses and Contact details of the Monitors are:

| | |
|---|---|
| <p>1. Shri Vishwanath Giriraj, IAS (Retd.) Flat 1001, A Wing, Landmark Towers, Opp Wadala Telephone Exchange, GD Ambekar Marg, Naigoan, Dadar East, Mumbai 400014 Ph: 022-24169883 Mobile No: 09821937549 Email: vgiriraj@rediffmail.com</p> | <p>2. Smt. MeenakshiMishra, IA & AS (Retd.). 198/1, Neb Valley, Neb sarai, IGNOU Road, New Delhi 110 068 Mob: 9869039055, 9869439055 Phone: 011-29533457 Email: pcmishra@hotmail.com</p> |
|---|---|

- 5.2 The task of the MONITOR shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Integrity Pact.
- 5.3 The MONITOR shall not be subject to instructions by the representatives of the parties and shall perform his functions neutrally and independently. He will report his findings to Chief Executive Officer, Prasar Bharati (CEO,PB).
- 5.4 Both the Parties accept that the MONITOR has the right to access, without restriction, all the documents relating to the Project/ procurement, including minutes of meetings.
- 5.5 The BIDDER accepts that the MONITOR has the right to access, without restriction, all Project documentation of the BUYER including that provided by the BIDDER. The BIDDER will also grant the MONITOR, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his Project documentation. The same is applicable to Subcontractors of the BIDDER. The MONITOR shall be under contractual obligation to treat the information and documents of the BIDDER and his Subcontractor(s) with confidentiality.
- 5.6 The BUYER will provide to the MONITOR sufficient information about all meetings

among the parties related to the Project/ procurement provided such meetings could have an impact on the contractual relations between the Parties. The Parties will offer to the MONITOR the option to participate in such meetings.

5.7 As soon as the MONITOR notices, or believe to notice, a violation of this INTEGRITY PACT, he will so inform the Authority designated by the BUYER with a copy to CVO, PB and request them to discontinue or take corrective action, or to take other relevant action. He will also inform separately to CEO, PB with copy to CVO, PB. 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.

5.8 The MONITOR will submit a written report to the CVO, PB within 4 to 8 weeks from the date of reference or intimation to him by the BUYER or BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.

5.9 If the MONITOR has reported to the CEO, PB and CVO, PB a substantial suspicion of an offence under the relevant IPC/PC Act and they have not, within reasonable time taken visible action to proceed against such offence, the MONITOR may also transmit the information directly to the Central Vigilance Commissioner

6 Article 6 - FACILITATION OF INVESTIGATION

In case of any allegation of violation of any provisions of this INTEGRITY PACT or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

7 Article 7 - LAW AND PLACE OF JURISDICTION

This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the BUYER.

8 Article 8 - OTHER LEGAL PROVISIONS/ ACTIONS

8.1 The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extent law in force relating to any civil or criminal proceedings.

8.2 Any dispute or difference arising between the parties with regard to the terms of this INTEGRITY PACT and / or, any action taken by the BUYER in accordance with this INTEGRITY PACT or interpretation thereof shall not be subject to arbitration.

8.3 Both the parties agree that this INTEGRITY PACT has precedence over the TENDER/

CONTRACT documents with regard to any of the provisions covered under this INTEGRITYPACT.

9 **Article 9 – VALIDITY**

9.1 The validity of this INTEGRITY PACT shall be w.e.f. the date of its signing and shall extend upto 5(five) years or during the complete execution of the CONTRACT to the satisfaction of both the BUYER and the BIDDER, including warranty period, whichever is later. For unsuccessful BIDDERS at the tendering / pre-contract stage, this INTEGRITY PACT shall expire after six (06) months from the date of signing of the CONTRACT.

9.2 Should one or several provisions of this INTEGRITY PACT turn out to be invalid; the remainder of this Integrity Pact shall remain valid. In this case, the Parties will strive to come to an agreement to their original intentions.

9.3 If any claim is made/ lodged during the validity period of the INTEGRITY PACT, the same shall be binding and continue to be valid despite the lapse of INTEGRITY PACT as specified above.

9.4 The parties hereby sign this INTEGRITY PACT at _____ on
_____.

(For & On behalf of the Prasar Bharati)

(For & On behalf of BIDDER)

(Office Seal)

(Office Seal)

Place:.....

Date:.....

Witness 1:

(Name & Address)

Witness 2:

(Name & Address)

2.5 Self-Declaration against the rule 144 (xi) in GFRs 2017

ANNEXURE-5 (FORM-5)

<To be in Company Letter Head>

< Location, Date>

To
Prasar Bharati

Subject: GeM Bid for The Supply, Installation, Testing, and Commissioning (SITC) of Data Center (DC) with Five year onsite warranty

RFP Reference No:

Dear Sir/Madam,

I/ We, represent that company is not a subsidiary/ affiliate/ attached office of any Border Companies as may be banned by Government of India for doing business in India as per revision of GFR rule 2020 or if from such a country, has been statutorily registered with the competent authority as per the procedure laid down in reference to Government Orders in this regards.

I/ We, hereby agree to provide copy of and/ or produced original of all such documents as may be necessarily required to be submitted evidence in this regard.

I/ We, hereby certified that this bidder fulfills all requirements in this regard and is eligible to be considered.

Yours sincerely,

Authorized Signature:

Name and Title of Signatory:

Name of Firm:

Address:

2.6 COMMERCIAL BID FORMAT

ANNEXURE-6 (FORM-6)

| Sl. No. | Item Description | Bill of Quantity (A) | Unit of Measure | Unit Price (B) | GST Per Unit(C) | Total Unit Cost (D) (D=B+C) | Total (A x D) |
|---------|--|----------------------|-----------------|----------------|-----------------|-----------------------------|---------------|
| 1 | SAN Storage 100 TB | 1 | No. | | | | |
| 2 | NAS Storage 500 TB | 1 | No. | | | | |
| 3 | Server Load Balancer | 1 | No. | | | | |
| 4 | 24 ports POE Switch | 4 | No. | | | | |
| 5 | SAN Switch | 2 | No. | | | | |
| 6 | Next Generation Firewall | 2 | No. | | | | |
| 7 | Layer 3 Switch | 2 | No. | | | | |
| 8 | Server | 4 | No. | | | | |
| 9 | 10G Fiber SM Transceiver | 8 | No. | | | | |
| 10 | Smart Racks | 1 | set | | | | |
| 11 | DC & DR Replication Software | 1 | set | | | | |
| 12 | Virtualization Software for 4 Servers | 1 | set | | | | |
| 13 | MS Windows Server Standard 2022 (16 Core) | 4 | set | | | | |
| 14 | MS SQL Server 2019 Standard (2 Core) License CSP ESD (Perpetual) | 4 | No. | | | | |
| 15 | 50TB Backup Appliance with Backup Software | 1 | Set | | | | |
| 16 | Installation and commissioning | 1 | Set | | | | |
| 17 | Training to Staff | 1 | Set | | | | |
| 18 | Warranty onsite | 5 | Year | | | | |
| | Grand Total including | | | | | | |
| | Total Cost in words | | | | | | |