

Corrigendum for the C-DAC RFP No. Tender No: CDACP/AG22-IT/22-23/356

S.No	page no.	RFP Clause	Item	RFP Ask	Corrigendum
1	137	PBG; Page No-137	Annexure-D	The Bank guarantee will expire on (Min 37 months from the date of successful installations of the items in the order)	The Bank guarantee will expire on (Min 38 months) from the date of successful deployment and acceptance of overall solution specified in Scope of work of the RFP)
2	9	Section II, Clause 5 subclause 4	Instrcution to Bidders (ITB)	Work orders confirming year and Area of activity and Certificate from the client indicating the Satisfactory deployment of 3way storage replication across DC, NDR and DR.	Previous work orders confirming year and Area of activity and Certificate from the client indicating the Satisfactory deployment of DC and DR by OEM/ Bidder need to be submitted. Supporting document towards 3 Way repliacation expereince can be from Bidder / Storage OEM
3	10	Section II, Clause 5 subclause 8	ITB	Established (existing) Support centre with more than 30 Professionals on roll (with at least 5 nos. of CCNA certified) at both Delhi and Bangalore together at the time of Bidding.	Established (existing) Support centre / office with more than 30 Professionals on roll (with at least 5 nos. of CCNA certified) at both Delhi and Bangalore together at the time of Bidding.
4	11	Section II, Clause 5 subclause I	ITB	The bidder must have service support center in New Delhi / NCR Delhi & Bangalore Region in order to comply with the necessary support and warranty terms (4hrs. response and NBD resolution). Bidder need to submit the declaration letter in this regard.	Ref. Sr. No.2, Section II, Clause 5 subclause 8, of Section-II (Queries, Clarification and Corrigendum)
5	8	Section II, Clause 4 subclause b	ITB	All the items covered in the Schedule of Requirements (Section – IV) must be supplied at site as per following: a) Category-I: within 120days from the date of placement of order. b) Category-II: within 180days from the date of placement of order.	All the items covered in the Schedule of Requirements (Section – IV) must be supplied at site as per following: a) Category-I: within 180 days from the date of placement of order. b) Category-II: within 270 days from the date of placement of order.
6	9	Section II, Clause subclause b	ITB	The Firm / Company should be in the business as a vendor for supply, installation, integration, commissioning and testing of Servers, Storages, Backup and Tape Libraries etc. for at least 3years as of 31st March 2022. Bidder shall share the details of previous experience in deployment and configuration of DC, Near DR and DR Storage replication during the last three years.	1. The Firm / Company should be in the business as a vendor for supply, installation, integration, commissioning and testing of Servers, Storages, Backup and Tape Libraries etc. for at least 7 years as of 31st March 2022. 2. Bidder/ OEM shall share the details of previous experience in deployment and configuration of DC, Near DR and DR Storage replication during the last three years. 3. Work orders of Bidder / OEM confirming year and Area of activity and Certificate from the client indicating the Satisfactory deployment of 3 way storage replication across DC, NDR and DR.
7	10	Section II, Clause 5 subclause 4	ITB	Bidder need to submit the PO copies (during the last 5 years) as mentioned below showcasing the supply of IT Hardware and IT Software items as part of establishing of DC and DR. Bidder need to provide the successful completion certificate towards the same. i. Single Purchase order with value of 200 Crores. OR ii. Two Purchase orders with 125 Crores each OR iii. Three Purchase orders with 90 Crores each.	Bidder need to submit the PO copies (during the last 7 years) as mentioned below showcasing the supply of IT Hardware and IT Software items as part of establishing of DC and DR. Bidder need to provide the successful completion certificate towards the same. i. Single Purchase order with value of 200 Crores. OR ii. Two Purchase orders with 125 Crores each OR iii. Three Purchase orders with 90 Crores each.
8	10	Section II, Clause 5 subclause b	ITB	Only the principal manufacturers or their authorised System Integrators are allowed to bid for the items as mentioned in the tender document, both are not allowed to bid simultaneously.	Only the principal manufacturers and / or their authorised System Integrators are allowed to bid for the items as mentioned in the tender document.
9	19	Section: Section- III: Special Conditions of Contract (SCC), Clause No-9. Payments:	Payments	a. No advance payment will be made. b. 50% payment shall be released only after supply and acceptance of all the items by CDAC, under respective category. No part payment shall be released in case of short shipment from the respective category. c. 40% of the Payment will be released upon installation / commissioning, integration, training, testing, demonstration of DC, Near DR, DR replication & failover etc. as stipulated in Section – IV: Scope of Supply and Services d. Balance 10% payment shall be released after submission of PBG (valuing 3% of order value) covering the warranty period of 38 months from the date of final installation, testing, commissioning, integration, training and acceptance by CDAC.	a. No advance payment will be made. b. 60% payment shall be released only after supply and acceptance of all the items by CDAC, under respective category. No part payment shall be released in case of short shipment from the respective category. c. 30% of the Payment will be released upon installation / commissioning, integration, training, testing, demonstration of DC, Near DR, DR replication & failover etc. as stipulated in Section – IV: Scope of Supply and Services d. Balance 10% payment shall be released after submission of PBG (valuing 3% of order value) covering the warranty period of 36 months + 2 months (total 38 months) from the date of final installation, testing, commissioning, integration, training and acceptance by CDAC. e. C-DAC reserves the rights to confiscate PBG amount if the bidder is not adhering to the support matrix of 4 hrs. response time and Next Business Day (NBD) complaint resolution.
10	24	Section IV, Clause 1, subclause b	Scope of supply and services	DC and BCP sites are approx. 100Mtr apart and existing Dark Fibre cable (OM4) will be used to connect the two sites directly with multiple 400G links	Bidder need to lay the Single Model /Multimode 96 Core Dark Fibre cable between DC and BCP (approx. 100 mts apart) based on the Transreceivers proposed on the Network components like Firewalls (FW01, FW02) and Switch types (05, 06,09 etc.). The Scope includes supply and installtion of rack mountable LIUs, splicing and termination including required Male/Female CConnectors.
11	28	Section IV, Clause 5, subclause d	Scope of supply and services	Bidder shall showcase the appropriate licenses (on the respective OEM site) mentioned in the RFP.	Bidder shall showcase the appropriate licenses on the respective OEM site/OEM sales order copy mentioned in the RFP.
12	29	Section IV, Clause 6, subclause b	Scope of supply and services	The Bidder will ensure that all stages covering installation, initial programming and configuration, and testing are fully documented and endorsed by the OEM. The Bidder will also be required to provide the Work Order placed on the OEM as documented proof of the involvement of the OEM within the scope of Paragraph 7 of Section IV. Bidders should link this with the Acceptance Criteria given at Paragraph 3e, 3f and 3g of Section IV.	The Bidder will ensure that all stages covering installation, initial programming and configuration, and testing are fully documented and endorsed by the OEM. The Bidder will also be required to provide the Work Order placed on the OEM as documented proof of the involvement of the OEM within the scope of Paragraph 5 of Section IV. Bidders should link this with the Acceptance Criteria given at Paragraph 3e, 3f and 3g of Section IV.

Corrigendum for the C-DAC RFP No. Tender No: CDACP/AG22-IT/22-23/356

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13	30	Section IV, Clause 7, subclause c	Scope of supply and services	The OEM is required to provide an Authorization as per Appendix C to this RFP that the OEM “undertakes to provide, within the Scope of Work defined in the tender, technical and other support towards fulfilling the requirements of installation, commissioning, benchmarking, acceptance criteria and product warranty services of the components to be supplied and installed at the C-DAC Customer sites”. The following paragraphs provide a brief, though not necessarily complete, interpretation of these commitments.	Please read Appendix C as “Annexure C”
14	31	Section IV, Clause 8	Scope of supply and services	Supply, Installation, Configuration, Commissioning, Integration, Testing and Maintenance Support of complete hardware including all necessary software licenses as per the BOM and Technical specifications mentioned in tender for DC, BCP, DR and any remote site. This will be done in consultation with the OEM as per Paragraph – of Section –.	Supply, Installation, Configuration, Commissioning, Integration, Testing and Maintenance Support of complete hardware including all necessary software licenses as per the BOM and Technical specifications mentioned in tender for DC, BCP, DR and any remote site.
15	32	Section IV, Clause 8, subclause o	Scope of supply and services	DC and BCP sites are approx. 100Mtr apart and existing Dark Fibre cable (OM4) need to be lighted to connect the Spines at the two sites directly with multiple 400G links for 1:1 oversubscription.	Bidder need to lay the Single Model /Multimode 96 Core Dark Fibre cable between DC and BCP (approx. 100 mts apart) based on the Transceivers proposed on the Network components like Firewalls (FW01, FW02) and Switch types (05, 06,09 etc.). The Scope includes supply and installation of rack mountable LIUs, splicing and termination including required Male/Female Connectors. Bidder shall ensure connectivity of the Spines at the two sites directly with multiple 400G links for 1:1 oversubscription.
16	32	Section IV, Clause 8, subclause p	Scope of supply and services	Dark Fibre lighting shall include supply of rack mounted LIUs and Single mode duplex Fibre LC connectors to light-up 32 cores on each side.	Dark Fibre lighting shall include supply of rack mounted LIUs and Multi Mode / Single Mode Fibre LC connectors to light-up 96 cores on each side.
17	32	Section IV, Clause 8, subclause p	Scope of supply and services	w. Fabric to be configured to show physical and logical fabric topology on a central dashboard with ability to show path of a flow over network topology.	Fabric to be configured to show physical /logical fabric topology on a central dashboard with ability to show path of a flow over network topology.
18	127	Section – VI: BOQ / Commercial-Bid Format Point. Validity Page no. 127		Delivery: FOB Delhi & Bangalore within 120 days for Category I and 180 days for Category II items, from the date of issuing of PO.	Delivery: FOB Delhi & Bangalore within 180 days for Category I and 270 days for Category II items, from the date of issuing of PO.
19	77	Category-II Clause no. 1. Network switch specifications		All the network switches (Types) should be from the same OEM and compatible with the Fabric Manager.	All the network switches (Types) should be from the same OEM and compatible with the Fabric Manager (given at 'Annexure-II Fabric Management Capabilities for Switches' under 'Category-II' of 'Section-V') . Fabric Manager in HA to be deployed across DC and BCP. Separate Fabric Manager in HA is required at DR. However, Bidder shall ensure that the Fabric Manager is deployed in HA at each location (Delhi and Bengaluru). Please note that the Fabric Manager requirements in Internet and MPLS are isolated (Ref. Page no.92, Annexure-II Fabric Management Capabilities for Switches, Serial no.1, Specifications Point no. 12 b
20	50	Section-V: Technical Specifications, 9. SERVER02	Server02	Processor : 1. Two Intel® Xeon® Scalable or AMD 2nd Gen processors, configured 2. 24 cores/processor @ 2.1 GHz base freq. or better. 3. Processor launch date should not be earlier than 2021).	Processor : 1. Two Intel® Xeon® Scalable 3rd Gen or AMD 3rd Gen processors, configured. 2. 24 cores/processor @ 2.1 GHz base freq. or better.
21	50	Section-V: Technical Specifications, 9. SERVER02	Server02	Memory : 1. 512 GB ECC RAM expandable to 1TB, @ 2933 MT/s, should have min. 12 DIMM slots 2. Memory should be supplied in balanced configuration.	Memory : 1. 512 GB ECC RAM expandable to 1TB, @ 3200 MT/s, should have min. 12 DIMM slots. All the DIMMS populated should be of same type, frequency and capacity.
22	50	Section-V: Technical Specifications, 9. SERVER02	Server02	Hard Drive : 1. 2 x 900GB SSDs in RAID1 2. 8 x 10TB SSDs in RAID 6.	Hard Drive : 1. 2 x 900GB SSDs in RAID1 2. 10 x 7.6TB SSD in RAID 6.
23	50	Section-V: Technical Specifications, 9. SERVER02	Server02	1.Should be installed with 2 nos. of NVIDIA H100 80GB GPUs 2.System should be NVIDIA certified for aforementioned GPUs	1.Should be installed with 2 nos. of NVIDIA H100 80GB GPUs 2.System should be NVIDIA / Server OEM certified for aforementioned GPU.
24	52	Section-V: Technical Specifications, 10. SERVER03	Server03	Two Intel® Xeon® Scalable or AMD 2nd Gen processors, configured 2. 24 cores/processor @ 2.1 GHz base freq. or better. 3. Processor launch date should not be earlier than 2021).	Processor : 1. Two Intel® Xeon® Scalable 3rd Gen or AMD 3rd Gen processors, configured. 2. 24 cores/processor @ 2.1 GHz base freq. or better.
25	52	Section-V: Technical Specifications, 10. SERVER03	Server03	Hard Drive : 1. 2 x 900GB SSDs in RAID1 2. 8 x 12TB NLNAS in RAID 6.	Hard Drive : 1. 2 x 900GB SSDs in RAID1 2. 8 x 12TB NL-SAS in RAID 6.
26	52	Section-V: Technical Specifications, 10. SERVER03	Server03	Memory :1. 192 GB ECC RAM expandable to 512GB, @ 2933 MT/s, should have min. 12 DIMM slots 2. Memory should be supplied in balanced configuration.	Memory : 192 GB ECC RAM expandable to 512 GB, @ 3200 MT/s, should have min. 12 DIMM slots.All the DIMMS populated should be of same type, frequency and capacity.
27	54	Section-V: Technical Specifications, 11. SERVER04	Server04	Processor : 1. Two Intel® Xeon® Scalable or AMD 2nd Gen processors, configured 2. 24 cores/processor @ 2.1 GHz base freq. or better. 3. Processor launch date should not be earlier than 2021).	Processor : 1. Two Intel® Xeon® Scalable 3rd Gen or AMD 3rd Gen processors, configured. 2. 24 cores/processor @ 2.1 GHz base freq. or better.
28	54	Section-V: Technical Specifications, 11. SERVER04	Server04	Hard Drive : 1. 2 x 900GB SSDs in RAID1 2. 8 x 10TB SSDs in RAID 6.	Hard Drive : 1. 2 x 900GB SSDs in RAID1 2. 10 x 7.6TB SSD in RAID 6.
29	54	Section-V: Technical Specifications, 11. SERVER04	Server04	Memory 3. 576 GB ECC RAM expandable to 1TB, @ 2933 MT/s, should have min. 12 DIMM slots 4. Memory should be supplied in balanced configuration.	Memory : 512 GB ECC RAM expandable to 1TB, @ 3200 MT/s, should have min. 12 DIMM slots.All the DIMMS populated should be of same type, frequency and capacity.
30	56	Section-V: Technical Specifications, 12. SERVER06	Server06	Processor : 1. Two Intel® Xeon® Scalable or AMD 2nd Gen processors, configured 2. 24 cores/processor @ 2.1 GHz base freq. or better. 3. Processor launch date should not be earlier than 2021).	Processor : 1. Two Intel® Xeon® Scalable 3rd Gen or AMD 3rd Gen processors, configured. 2. 24 cores/processor @ 2.1 GHz base freq. or better.
31	56	Section-V: Technical Specifications, 12. SERVER06	Server06	Hard Drive : 1. 2 x 900GB SSDs in RAID1 2. 8 x 10TB SSDs in RAID 6.	Hard Drive : 1. 2 x 900GB SSDs in RAID1 2. 10 x 7.6TB SSDs in RAID 6.
32	56	Section-V: Technical Specifications, Page No. 56/144, 12. SERVER06	Server06	Memory 1. 768 GB ECC RAM expandable to 2TB, @ 2933 MT/s, should have min. 12 DIMM slots 2. Memory should be supplied in balanced configuration.	Memory : 768 GB ECC RAM expandable to 2TB, @ 3200 MT/s, should have min. 12 DIMM slots.All the DIMMS populated should be of same type, frequency and capacity.
33	44	Section-V: Technical Specifications ,4-KM01	KM01	The proposed solution should be a appliance based solution integrated with Hardware Security Module (HSM), standard 19” rack mountable with sliding rails, max. 2U size	Proposed solution can be Appliance or Software based meeting both H/W, S/W and HSM Specifications mentioned under KM01.

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S.No	page no.	RFP Clause	Item	RFP Ask	Corrigendum
34	44	Section-V: Technical Specifications ,4-KM01	KM01	5.Should support REST, NAE-XML, KMIP, PKCS#11, JCE, .NET, MCCAPI, MS CNG API for application integration	5.Should support REST, KMIP, PKCS#11, JCE, .NET, MCCAPI, MS CNG API for application integration
35	44	Section-V: Technical Specifications ,4-KM01	KM01	7.Integration with Local User , AD, LDAPS, certificate authentication for clients	7.Integration with Local User , AD, LDAPS
36	39	Section-V: Technical Specifications , Category-I , HSM01 Point :-3	HSM01	Host Connectivity TCP/IP Network based appliance- Dual 1 Gigabit interfaces, dual fiber 10 Gigabit Ethernet interfaces	Host Connectivity TCP/IP Network based appliance- Dual fiber 10 Gigabit Ethernet interfaces.
37	40	Section-V: Technical Specifications , Category-I , HSM01 Point :- 19	HSM01	Load Balancing Clustering, Load Balancing	Load Balancing Clustering, Load Balancing support; H/W & S/W to meet clustering and load-balancing functionalities to be provided (if required)
38	39	Section-V: Technical Specifications , Category-I , HSM01 Point :- 9	HSM01	Cryptographic module security and certification :- Compliance to FIPS 140-2 Level 3 , Password and Multi-Factor (PED)	Cryptographic module security and certification :- Compliance to FIPS 140-2 Level 3 , Password, Multi-Factor, m-of-n/quorum-based authentication using Smart Cards/Tokens
39	38	Section-V: Technical Specifications , Category-I , HSM01 Point :- 11	HSM01	Number of Partitions within HSM : 5	Number of Partitions within HSM : 5 on Day 1
40	39	Section-V: Technical Specifications , Category-I , HSM01 Point :- 13	HSM01	13. Key Storage Area Inside the HSMs FIPS 140-2 Level3 cryptography boundary	13. Key Storage Area Inside/Within the HSM's FIPS 140-2 Level3 cryptography boundary
41	40	Section-V: Technical Specifications , Category-I , HSM01 Point :- 26	HSM01	Backup device : Provide one no. of backup device to take backup of HSM stored keys.	Backup: 1. HSM should support backup and restore of keys in accordance with and meeting FIPS 140-2 level 3 compliance. 2. Supply should include required device/tokens and licenses for meeting the stipulated backup requirement.
42	41	Section-V, Technical Specification,Category1, HSM01,Point no.32-Additional Requirement		The HSM should be provided with 1) 1 Nos. of PED device, 2) 1 Nos. of compatible keys/card set of 10keys, 3) 1 Nos. of Backup HSM 4) The quoted Backup HSM and HSM should compatible with "Safenet Luna SA 7000" HSM and it's backup device	The HSM should be provided with 1) 1 Nos. of token/Smart Card reader for authentication and cable 2) 1 Nos. of compatible smart cards/token set of 10keys, 3) 2 nos. of compatible 3 mtr cables and SFPs for 10Gbe connectivity 4) Unlimited client licenses for host connectivity
43	41	Section-V: Technical Specifications , Category-I , HSM02 Point :-1	HSM02	Physical Characteristics PCI-Express CEM 3.0, PCI, PCI Express Base 2.0 Low Profile PCIe card Input Voltage – 230 V AC 50 Hz, Operating Temperature range must include 15 degrees Centigrade to 35 degree centigrade, Operating humidity range must be better than 30 to 70 (RH) Non condensing at 35 degree centigrade, Protection against physical attacks such as use of potting of critical components, tamper evident security labels etc.	Physical Characteristics PCI-Express 3.0 x8 card with bracket. Riser to be provided for full height card
44	41	Section-V: Technical Specifications , Category-I , HSM02 Point :-3	HSM02	Host connectivity TCP/IP Network based appliance- dual 1 Gigabit interfaces dual 10 Gigabit Ethernet interfaces	This point is dropped
45	41	Section-V: Technical Specifications , Category-I , HSM02 Point :-11	HSM02	Number of Partitions within HSM - 5	Number of Partitions within HSM - 1
46	41	Section-V: Technical Specifications , Category-I , HSM02 Point :-12	HSM02	Number of Partitions Expandable upto within HSM - 20	This point is dropped
47	42	Section-V: Technical Specifications , Category-I , HSM02 Point :-18	HSM02	Load Balancing Clustering, Load Balancing	This point is dropped
48	42	Section-V: Technical Specifications , Category-I , HSM02 Point :-19	HSM02	Key Backup Secure key backup and recovery	Key Backup: Secure key backup and recovery in FIPS 140-2 compliant method. At no point keys backup and restore should employ plain text key exchange.
49	42	Section-V: Technical Specifications , Category-I , HSM02 Point :-24	HSM02	Backup device : Provide one no. of backup device to take backup of HSM stored keys.	Backup Device: 1. HSM should support backup and restore of keys in accordance with and meeting FIPS 140-2 level 3 compliance. 2. Supply should include required device/tokens and licenses for meeting the stipulated backup requirement.
50	43	Section-V: Technical Specifications , Category-I , HSM02 Point :-28	HSM02	Rack mounting HSM should mountable and fit in standard 42 U, 19" rack Mounting sliding rail Kit and with cable manager	This point is dropped
51	43	Section-V: Technical Specifications , Category-I , HSM02 Point :-29	HSM02	Packaging contents 1. Supply with User manual or links 2. Server Rail Kit with screws 3. IEC type power cables	Packaging contents 1. Supply with User manual or links 2. Compatible PCIe card bracket 3. Riser card (if required) 4. 1 Nos. of token/Smart Card reader for authentication and cable 5. 1 Nos. of compatible smart cards/token set of 10keys,
52	58	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 1. Storage Type	STGSANNAS01	1. Unified storage appliance must be quoted with support for SAN (FC and iSCSI) and NAS (NFSv3, v4 and v4.1, pNFS, CIFS, SMB 2, 3,3.02 and 3.1.1; FTP and SFTP). 2. Access with hybrid capability to operate with NVMe Solid State Drives (NVMe SSDs) and Hard Disks Drives (HDDs) with auto-tiering between all of them	1. Storage solution quoted should support both SAN (FC, iSCSI) and NAS (NFSv4 and v4.1, CIFS, SMB V3.1.1) delivery modes 2. Storage capacity shall be offered using NVMe Solid State Drives (NVMe SSDs) ONLY
53	58	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 2. Storage Architecture	STGSANNAS01	1(a) Minimum 256GB DRAM cache on each controller.	1(a) Minimum 512GB DRAM Globally coherent/Federated cache should be provisioned in the quoted storage solution.
54	58	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 2. Storage Architecture	STGSANNAS01	1(b) The cache should be Globally coherent. Data should be protected against loss or unavailability in case of failure of 1 controller outage, for NVMe	1(b) The cache should be Globally coherent/Federated. Data should be protected against loss or unavailability in case of failure of 1 controller (applicable for both SAN and NAS mode of delivery).

Corrigendum for the C-DAC RFP No. Tender No: CDACP/AG22-IT/22-23/356

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55	58	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 2. Storage Architecture	STGSANNAS01	1. Offered storage must have minimum dual active-active controllers for NVMe & NL-SAS tiers with: d. NVMe and NL-SAS/SATA disk pools should use separate controllers to ensure different failure domains 2. Ability to support up to 100 HDDs/SSDs in same system by adding disk enclosures and scalability to 2PB in the same solution	1. Offered storage must have minimum dual active-active controllers offering NVMe disks with: Point 1(d) - Deleted 2. Ability to support and scale-up to double the capacity (1PB) in the same solution (without requiring additional disk enclosures, IO servers/storage controllers) 3.Ability to support and scale-up to 2PB in the same solution by adding disk enclosures, IO servers/storage controllers.
56	59	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 2. Storage Architecture	STGSANNAS01	6. It should support ability to sustain minimum 2 controller and 4 drive failures without loss of data and impact on performance	6. The storage solution should have ability to sustain simultaneous failure of 1 storage controller/IO server and 2 drives without loss of data and impact on availability & performance
57	59	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 3. Storage Capacity	STGSANNAS01	1. Storage solution should be offered with total 500TB usable capacity with 1DWPD on dual port NVMe SSDs	1. Storage solution should be offered with total 500TB usable capacity on NVMe disks after factoring in resiliency and failures as stipulated in para 3 and 6 of Sr. no. 2. Storage Architecture.
58	59	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 4. SSDs & HDDs	STGSANNAS01	1. Unified storage must be supplied with self-encrypting dual-ported 1DWPD NVMe SSDs 2. Storage should support both in-line and post process data reduction via compression /deduplication. 3. NVMe SSDs must be configured in RAID6 dual parity protection with one hot spare per pool.	1. Unified storage should have support for transparent to application & storage delivery mode (SAN & NAS) data at rest encryption via either self-encrypting or storage controller/IO server driven. 2. Storage should support both in-line and post process data reduction via compression & deduplication. 3. NVMe SSDs must be configured in RAID6 dual parity or equivalent or better protection with one hot spare per pool.
59	59	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 5. Data Integrity	STGSANNAS01	1. The Storage System should support detecting and correcting data integrity issues due to any bit rot or phantom writes, misdirected reads/writes operations	1. The Storage solution should have capability for detecting and correcting data integrity issues. The bid capabilities of the proposed solution are to be presented in bid response exclusively against the compliance to said clause. C-DAC reserves the right to accept or reject based upon stated capabilities of the solution by bidder.
60	59	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 8. Protocol Support	STGSANNAS01	1. Should support iSCSI, SMB2 and SMB3,NFSv2,NFSv3,NFSv4 and NFSV4.1,SNMP,SMT.	1. Storage solution quoted should support iSCSI, NVMe over TCP (Optional), NFSv4 and v4.1, CIFS, SMB V3.1.1
61	59	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 7. Network Interfaces	STGSANNAS01	1. Offered storage should have minimum 4x 100Gbps QSFP28 ethernet ports with required optical modules for connectivity to client. 2. Additionally, storage should have 2x 1Gbps ethernet ports for management. 3. Each storage controller should have at least 2 x 100 GbE ports.	1. Quoted storage solution should have minimum 4x 100Gbps QSFP28 front end ports for connectivity and storage delivery to SAN & NAS clients. Supply should include switches with required optical modules, cables, SFPs, Transceivers if required and should meet no Single Point of Failure as stipulated in Para 3 of 2. Storage Architecture 2. Additionally, storage should have 2x 1Gbps ethernet ports for management. Point 3. - Deleted
62	60	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 9. Rack Space	STGSANNAS01	1. Offered solution must fit in standard 42U 19" RACK 2. Storage solution should fit in max 10U 3. Max. rated power for the storage solution should not be more than 5KW	1. Offered solution must fit in standard 42U 19" RACK. 2. Storage solution should fit in max. 21U.
63	60	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 7. Network Interfaces	STGSANNAS01	1. Offered storage should have minimum 4x 100Gbps QSFP28 ethernet ports with required optical modules for connectivity to client.	Ref. Sr. 10 of STGSANNAS01: (Queries, Clarification and Corrigendum)
64	60	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 7. Performance	STGSANNAS01	1. The storage solution must support 1000,000 100% random read IOPS with 8KB block size and with DIRECTIO (to bypass client cache) on iSCSI interface with less than 3ms latency.	1. The storage solution must deliver 5,00,000 IOPS (70:30 Read to Write ratios) using 8KB block size and with DIRECTIO (client cache bypass) on any of the block access protocols stated in requirements, with demonstrated less than 3ms latency.
65	60	Section-V: Technical Specifications, Category-I, 13. STGSANNAS01, Point 10. Virtualization Support	STGSANNAS01	10. Should support VMWare VAAI and VASA	10. Support- Should support VMWare VAAI and VASA or equivalent for integration with Vmware vSphere for storage management.
66	74	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-point 8	STGBKP01	Proposed solution must provide Bare Metal Recovery, deduplication, encryption, database online backup, deduplication, backup data replication etc. with installation of single agent on clients. Multiple Agents/Binaries should not be installed on the production Servers to achieve all above features.	Proposed solution must provide Bare Metal Recovery, deduplication, encryption, database online backup, deduplication, backup data replication etc. with installation of single agent on clients. Multiple Agents/Binaries required to meet above mentioned should be provided along with the required perpetual to use licenses.
67	74	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-point 9	STGBKP01	Backup Solutions should have capabilities to tape/disk-out backup catalogue and deduplication catalogue separately. Also should be able to replicate all catalogue information along with replication of backup images to DR site.	The proposed backup solution should have capabilities to backup all catalogue information to disk or tape media for disaster recovery purposes. Also, it should be able to replicate the catalogue backup alongwith data backup to DR site.
68	74	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-point 12	STGBKP01	Proposed Backup solution must provide a "turnkey" fully integrated backup solution (Backup Appliance and Backup Software) from a single OEM for better supportability, performance and to avoid multi-vendor ownership which results in to daily challenges in later stage	Proposed Backup solution must provide a "turnkey" fully integrated backup solution (including both Backup Appliance and Backup Software) for better supportability, performance.
69	75	Section-V: Technical Specifications, Point19.STGBKP01, Sub-point.13	STGBKP01	The proposed disk appliance should be offered with dual controller and each controller shall support minimum 4 x 10Gbps Ethernet and 2x100G Fibre Channel.	The proposed disk appliance should be offered with dual controller or more. The solution must have minimum 4 x 10Gbps Ethernet and 2x100G/4x25G/4x16G Fiber Channel. Requisite intermediate SAN & Ethernet Switches and associated components shall be included in the solution and supplied. The entire solution must be with No Single Point of Failure (NSPF).

Corrigendum for the C-DAC RFP No. Tender No: CDACP/AG22-IT/22-23/356

S.No	page no.	RFP Clause	Item	RFP Ask	Corrigendum
70	75	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-point 15	STGBKP01	The proposed Backup Appliance should have integration with Physical Tape devices and offer mechanism for taking the backup on a physical tape library from the appliance seamlessly.	The proposed Backup Appliance should have integration with Physical Tape devices and offer mechanism for taking the backup on a physical tape library from the appliance seamlessly using FC SAN N/W. The proposed backup appliance should be compatible with Category-II, 14. STGBKP01 for above ask and should be supplied with additional components required to meet it.
71	75	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-point 16	STGBKP01	The proposed disk based backup appliance shall have flexibility to enable or disable the de-duplication feature for a given disk pool in Appliance for Faster Backup and Restoration.	Enabling and disabling of De-duplication feature is optional
72	75	Section-V: Technical Specifications, Point19.STGBKP01, Sub-point 18	STGBKP01	18. The Proposed Backup solution must provide Management of the backup software and backup disk dedupe appliance from the same console for better manageability.	The Proposed Backup solution must provide Management of the backup software and backup disk dedupe appliance from Web based console(s) for better manageability.
73	75	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-point 19	STGBKP01	The proposed Purpose Build Backup Disk Appliance must be capable to act as a Backup Controller/Backup Server and Data Mover/Media Server simultaneously.	The proposed Purpose Build Backup Disk Appliance/Solution must be capable to act as a Backup Controller/Backup Server and Data Mover/Media Server simultaneously.
74	75	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-Point 20	STGBKP01	Proposed Backup Appliance solution must be able to perform agentless backup RHEV and VMWare environment without the need of any additional proxy host.	Proposed Backup Appliance solution must be able to perform agent/agentless backup of RHEV and VMWare environment without the need of any additional proxy host.
75	75	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-Point 22	STGBKP01	Proposed Solution Should include Single patch upgrade for backup software, backup appliance, file system and security updates.	Constituting components of proposed solution (backup appliance, software, file system) should be upgradeable through single software patch bundle without breaking the compatibility between them.
76	75	Section-V: Technical Specifications, Point 19.STGBKP01, Sub-Point 24	STGBKP01	The Proposed backup software license should not be tied to the storage device. This means if another Backup Appliance is installed at the DR site, then the appliance will not need separate dedupe license or any other backup software license.	The proposed backup solution licensing should site/appliance specific. The bidder must provide all the licenses for the purpose built backup appliance including Backup, Replication, Encryption, WORM (Write Once Read Many) at DC and the DR site for the entirety of the proposed solution.
77	76	Section-V: Technical Specifications, 19.STGBKP01, sub-point 31 & 32	STGBKP01	Backup Software shall be compatible to take backups on to D2D as VTL backup on to iSCSI targets (Ref. Backup Software and Tape Library)	Backup Software shall be compatible to take backups on to D2D as VTL/ Disk, backup on to iSCSI targets (Ref. Backup Software and Tape Library)
78	117	Section-V: Technical Specifications Category-II d. WAF Type-01	WAF Type-01	Certified for EAL2 / Common Criteria Program for Security related functions / Indian Common Criteria certification Scheme (IC3S) by STQC.	Certified for EAL2 /EAL4 Common Criteria Program for Security related functions / Indian Common Criteria certification Scheme (IC3S) by STQC or equivalent/ IC3S/NSS Certification for WAF
79	116	Section-V: Technical Specifications Category-II d. WAF Type-01	WAF Type-01	Support WAF Features – i) Protection from the OWASP Top 10 application attacks ii) Support API Protection, API Gateway, captcha, Virtual patching, Data Leak Prevention iii) SQLi/XSS Injection Detection, Cookie Poisoning, Session Hijacking, Buffer Overflow Attacks, Brute Force Attacks, Path (directory) Traversal, Malicious file upload, XML/JSON/SOAP Validation, HTTPS Header security iv) The proposed appliance should provide minimum 50Gbps WAF (SSL) throughput. v) The server load balancer should cater up to 50,000 SSL TPS on RSA 2K key and 40,000 ECC CPS on (EC P256). vi) Zero Day Attack Blocking	Support WAF Features – i) Protection from the OWASP Top 10 application attacks ii) Support API Protection, API Gateway and or via 3rd integration, captcha or equivalent security checks, Virtual patching, Data Leak Prevention iii) SQLi/XSS Injection Detection, Cookie Poisoning, Session Hijacking, Buffer Overflow Attacks, Brute Force Attacks, Path (directory) Traversal, Malicious file upload and or via integration, , XML/JSON/SOAP Validation, HTTPS Header security iv) The proposed appliance should provide SSL throughput of minimum 80% of the 50 Gbps throughput. v) The server load balancer should cater up to 50,000 SSL TPS on RSA 2K key and 40,000 ECC CPS on (EC P256). vi) Zero Day Attack Blocking
80	67	Section 5 / clause 17.1.1	SIEM01	SIEM solution must be an on premise scalable dedicated appliance / purpose built OEM Solution. It should be a physically segregated three tier architecture and support both agent-based and agent-less for information collection.	SIEM solution must be an on premise scalable dedicated appliance / purpose built OEM Solution / Software based by providing the requisite Hardware along with OS and Software with all the necessary licenses.
81	67	Section 5 / clause 17.1.2	SIEM01	It should have minimum 50K sustained and peak events per second (EPS) across all tier (Collection, Correlation and Management). Collectors should be able to buffer events and should be able to deploy multiple collectors for scalability.	It should have minimum 50K sustained / 2TB per day and 70K peak events per second (EPS) or 3TB per day across all tier (Collection, Correlation and Management). Collectors should be able to buffer events and should be able to deploy multiple collectors for scalability.
82	68	Section 5 / clause 17.1.10	SIEM01	Option to deploy in HA mode.	SIEM solution deployment shall be HA mode. DC and BCP will be HA pair & runs Active-Active and DR will be Passive (in case of disaster only it will be active). All the required licenses shall be included from day 1.
83	68	Section 5 / clause 17.1.11	SIEM01	The proposed appliance / Hardware must have at least 2x10GE (SFP+, 10GBase-SR) / 2x25G (SFP28, 25GBase SR) and 2x1GE (1000Base-F, 1000 Base-SX) / Copper fully populated from day one. Supply must include required Transceivers.	The proposed appliance / Hardware must have at least 2x10GE (SFP+, 10GBase-SR) and 2x1GE (1000Base-F, 1000 Base-SX) / Copper fully populated from day one. Supply must include required Transceivers.
84	68	Section 5 / clause 17.2.2	SIEM01	SIEM solution must support information in the context of network and security devices(like Switches, Routers, Firewall, WAF, DDoS, Server and Network Load balancer, Anti-APT), SDN controllers, Virtualization and Container environments (VMWare, VMWare NSX, Hyper-V, Redhat, Docker etc.) custom applications, end point security (EDR / XDR) and their centralized controller, DLP software, Incident and ticketing Management tool, Syslog, ELK Stack, Physical security devices (biometric readers, smart card etc.), Storage (EMC, NetApp, Isilon, Nutanix etc.), Databases, VOIP, AAA & NAC.	SIEM solution must support information in the context of network and security devices(like Switches, Routers, Firewall, WAF, DDoS, Server and Network Load balancer, Anti-APT), SDN controllers, Virtualization and Container environments (VMWare, VMWare NSX, Hyper-V, Redhat, Docker etc.) custom applications, end point security (EDR / XDR) and their centralized controller, DLP software, Incident and ticketing Management tool, Syslog, ELK Stack, Physical security devices (biometric readers, smart card etc.), Enterprise Storage, Databases, VOIP, AAA & NAC.
85	Page 120	4. Network Access Control-01 , Point No. 5	Network Access control-01	Solution must be provided with perpetual Licenses, supporting minimum 500 device for TACACS+ and 1000 devices for NAC and 100 for device Profiling, Posturing and Guest Access from Day 1. License should be splittable across (DC, BCP and DR)	Solution must be provided with perpetual Licenses, supporting minimum 500 device for TACACS+ and 1000 devices for NAC and 1000 for device Profiling, Posturing and Guest Access from Day 1. License should be splittable across (DC, BCP and DR)
86	Page 125,	4. Network Access Control-01 , Point No. 49		Proposed hardware appliance must have at least 2x 10G SFP+ SR multimode LC and 2x 1G copper ports populated from Day-1 compatible with proposed the switch.	Proposed hardware appliance must have at least 2x 1G FC ethernet ports or copper populated from Day-1

Corrigendum for the C-DAC RFP No. Tender No: CDACP/AG22-IT/22-23/356

S.No	page no.	RFP Clause	Item	RFP Ask	Corrigendum
87	106	Page No 106 /Specification and Compliance - Firewall Type-FW02 (North-south in HA Pair) Point No - 42 (iv)	Firewall Type-NGFW02	pre-populated Licensed copies of Operating systems (like Windows 7, Windows 8.1, Windows 10, Linux and Android etc.) and applications/software (like Microsoft Office).	Pre-populated Licensed copies of Operating systems (like Windows 7, Windows 8.1, Windows 10 etc.) and applications/ softwares (like Microsoft Office).
88	108	Page No 108 /Specification and Compliance - Firewall Type-FW02 (North-south in HA Pair) 2. Management Point No - 8	Firewall Type-NGFW02	Must provide the real time health status of NGFW on dashboard for CPU memory utilization, state table, total No. of concurrent connections and the connections/second counter, real time data transfer/bandwidth utilization of individual IP/Application/protocol/port/Interface/Zone.	Must provide the real time health status of NGFW on dashboard and CLI interface together about CPU memory utilization, state table, total No. of concurrent connections and the connections/second counter, real time data transfer/ bandwidth utilization of individual IP/ Application/protocol/port/Interface/Zone.
89	110	Clause 2, subclause C, Features-10	Firewall Type-NGFW02	Must support NAT (SNAT and DNAT) with following modes Static, Dynamic, PAT, Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4), Nat46 (IPv4-to-IPv6) , DNS64 & DHCPv6 functionality.	Must support NAT (SNAT and DNAT) with following modes Static, Dynamic, PAT, Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4).
90	94	Clause 2, subclause A, Features-3	Firewall Type-FW01	Must have 6x 100GE/40GE QSFP28 (single mode LC), 16x 10 GE SFP+ multimode LC, 2x RJ45 Management ports from Day1. All required transceivers should be populated from day one and compatible with the quoted switches.	Must have 8x 100GE QSFP28 (single mode LC), 16x 10 GE SFP+ multimode LC, 2x RJ45 Management ports from Day1. All required transceivers should be populated from day one and compatible with the quoted switches.
91	95	Clause 2, subclause A, Features-10	Firewall Type-FW01	Must support NAT (SNAT and DNAT) with following modes Static, Dynamic, PAT, Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4), Nat46 (IPv4-to-IPv6) , DNS64 & DHCPv6 functionality.	Must support NAT (SNAT and DNAT) with following modes Static, Dynamic, PAT, NAT 66 (IPv6-to-IPv6), NAT 64 (IPv6-to-IPv4).
92	95	Clause 2, subclause A, Features-7	Firewall Type-FW01	Concurrent sessions of 2 million or above and new sessions / Sec of 1 Million or above.	Concurrent sessions of 2 million or above and new sessions / Sec of around 0.5 Million or above.
93	95	Clause 2, subclause A, Features-12	Firewall Type-FW01	Firewall appliance must have at least 20 virtual firewall domains/instant (active from day-1) scalable to 25(with additional license) with each firewall domains/instances having a separate administrative control OR equivalent, Security zones and VLAN.	Firewall appliance must have at least 20 virtual firewall domains/instant (active from day-1) scalable to 25(with additional license) with each firewall domains/instances having a separate administrative control OR equivalent, Security zones and VLAN. Associated Licenses, Software and Hardware towards Virtual domains / VDOMS/ Virtual instances shall be provided from day 1
94	99	Clause 2, subclause A, Features-42.xvii	Firewall Type-FW01	number of Interfaces - 4x GE RJ45 ports, 2x 10 GE SFP+ slots	number of Interfaces - 2 x GE RJ45 ports, 2x 10 GE SFP+ slots
95	99	Clause 2, subclause A, Features-42.xxi	Firewall Type-FW01	2 TB in RAID 1 from day one	Sufficient storage host the 25 VM's or 2 TB in Raid 1/ SSD from day one.
96	99	Clause 2, subclause A, Features-42.xviii	Firewall Type-FW01	VM's of at least 50	Sr. 11, Firewall Type-FW01 (Queries, Clarification and Corrigendum)
97	100	Clause 2, subclause A, Features-46	Firewall Type-FW01	Firewall appliance must have at least 2TB local hard-disk in order to keep log/statistics information	Firewall appliance must have at least 400GB SSD local hard-disk in order to keep log/statistics information
98	101	Clause 2, subclause A, General-4	Firewall Type-FW01	The proposed Firewall must have redundant Hot swappable Power supply from day one. Appliances/s must be rack mountable (supply support sides rails if required).	The proposed Firewall must have redundant Power supplies from day one. Appliances/s must be rack mountable (supply support sides rails if required).
99	100	Clause 2, subclause A, 2.Management-8	Firewall Type-FW01	Must provide the real time health status of NGFW on dashboard for CPU memory utilization, state table, total No. of concurrent connections and the connections/second counter, real time data transfer/bandwidth utilization of individual IP/Application/protocol/port/Interface/Zone	Must provide the real time health status of NGFW on dashboard and CLI together for CPU memory utilization, state table, total No. of concurrent connections and the connections/second counter, real time data transfer/bandwidth utilization of individual IP/Application/protocol/port/Interface/Zone
100	102	Clause 2, subclause B, Features-3	Firewall Type-FW02	Must have 6x 100GE/40GE QSFP28 single mode LC, 16x 10 GE SFP+ multimode LC, 2x RJ45 Management ports from Day1. All required transceivers should be populated from day one and compatible with the quoted switches.	Must have 8 x 100GE QSFP28 single mode LC, 16x 10 GE SFP+ multimode LC, 2x RJ45 Management ports from Day1. All required transceivers should be populated from day one and compatible with the quoted switches.
101	102	Clause 2, subclause B, Features-7	Firewall Type-FW02	Concurrent sessions of 2 million or above and new sessions / Sec of 1 Million or above.	Concurrent sessions of 2 million or above and new sessions / Sec of around 0.5 Million or above.
102	103	Clause 2, subclause B, Features-10	Firewall Type-FW02	Must support NAT (SNAT and DNAT) with following modes Static, Dynamic, PAT, Nat66 (IPv6-to-IPv6), Nat 64 (IPv6- to-IPv4), Nat46 (IPv4-to-IPv6) , DNS64 & DHCPv6 functionality	Must support NAT (SNAT and DNAT) with following modes Static, Dynamic, PAT, Nat66 (IPv6-to-IPv6), Nat 64 (IPv6- to-IPv4).
103	103	Clause 2, subclause B, Features-12	Firewall Type-FW02	Firewall appliance must have at least 20 virtual firewall domains /instant active from day-1 scalable to 50(with additional license) with each firewall domains/instances having a separate administrative control OR equivalent, Security zones and VLAN.	Firewall appliance must have at least 20 virtual firewall domains/instant (active from day-1) scalable to 25(with additional licenses) with each firewall domains/instances having a separate administrative control OR equivalent, Security zones and VLAN. Associated Licenses, Software and Hardware towards Virtual domains / VDOMS/ Virtual instances shall be provided from day 1
104	106	Clause 2, subclause B, Features-42.iv	Firewall Type-FW02	pre-populated Licensed copies of Operating systems (like Windows 7, Windows 8.1, Windows 10, Linux and Android etc.) and applications/software (like Microsoft Office).	pre-populated Licensed copies of Operating systems (like Windows 7, Windows 8.1, Windows 10 etc.) and applications/software (like Microsoft Office).
105	107	Clause 2, subclause B, Features-42.xvii	Firewall Type-FW02	number of Interfaces - 4x GE RJ45 ports, 2x 10 GE SFP+ slots	Number of Interfaces - 2 x GE RJ45 ports, 2x 10 GE SFP+ slots
106	107	Clause 2, subclause B, Features-42.xxi	Firewall Type-FW02	2 TB in RAID 1 from day one	Sufficient storage host the 25 VM's or 2 TB in Raid 1/ SSD from day one.
107	107	Clause 2, subclause B, Features-46	Firewall Type-FW02	Firewall appliance must have at least 2TB local hard-disk in order to keep log/statistics information	Firewall appliance must have at least 400GB SSD local hard-disk in order to keep log/statistics information
108	109	Clause 2, subclause A, General-4	Firewall Type-FW01	The proposed Firewall must have redundant Hot swappable Power supply from day one. Appliances/s must be rack mountable (supply support sides rails if required).	The proposed Firewall must have redundant Power supplies from day one. Appliances/s must be rack mountable (supply support sides rails if required).
109	107	Clause 2, subclause B, 2.Management-8	Firewall Type-FW02	Must provide the real time health status of NGFW on dashboard for CPU memory utilization, state table, total No. of concurrent connections and the connections/second counter, real time data transfer/bandwidth utilization of individual IP/Application/protocol/port/Interface/Zone	Must provide the real time health status of NGFW on dashboard and CLI together for CPU memory utilization, state table, total No. of concurrent connections and the connections/second counter, real time data transfer/bandwidth utilization of individual IP/Application/ protocol/ port/Interface/Zone.
110	77	Category-II , Switch Type-06	Switch Type-06	Device should be based on industry standard virtual output queue based architecture to avoid head-of-line blocking issues.	Device should be based on industry standard virtual output queue based architecture or equivalent to avoid head-of-line blocking issues.
111	77	Category-II , Switch Type-06	Switch Type-06	Device should support minimum 128-way ECMP.	Device should support minimum 64-way ECMP.
112	78	Category-II , Switch Type-06	Switch Type-06	Device should be able to support 256K IPv4 routes.	Device should be able to support 256K IPv4 routes and 256K IPV6 routes
113	78	Category-II , Switch Type-06	Switch Type-06	Device should support ISIS (IPv4 & IPv6), OSPF (IPv4 & IPv6), BGP, BGP monitoring protocol.	Device should support OSPF (IPv4 & IPv6), BGP, BGP monitoring protocol. ISIS (IPv4 & IPv6) is optional.
114	78	Category-II , Switch Type-06	Switch Type-06	Device should support graceful restart for ISIS, OSPF and BGP.	Device should support OSPF (IPv4 & IPv6), BGP, BGP monitoring protocol. ISIS (IPv4 & IPv6) is optional.
115	78	Category-II , Switch Type-06	Switch Type-06	Device should have virtual output queuing based architecture, such that every input port will have a virtual output queue for every output port on the switch.	Device should have virtual output queuing based architecture, such that every input port will have a virtual output queue for every output port on the switch or equivalent mechanism

Corrigendum for the C-DAC RFP No. Tender No: CDACP/AG22-IT/22-23/356

S.No	page no.	RFP Clause	Item	RFP Ask	Corrigendum
116	79	Category-II , Switch Type-06	Switch Type-06	Device should support onboard tcpdump/wireshark for troubleshooting purpose and should support mirroring to L3 destination using GRE encapsulation	Device should support onboard tcpdump/wireshark for troubleshooting purpose and should support mirroring to L3 destination using GRE encapsulation or equivalent
117	79	Category-II , Switch Type-06	Switch Type-06	All proposed switches in the network should be able to run on same OS image and managed from single dashboard for simplified operations with minimal security exposure.	Switches (Type-6, Type-3, Type-9, Type-1 and Type-5) in the network should be able to run on same OS image/version and managed from single dashboard for simplified operations.
118	77	Category-II , Switch Type-06	Switch Type-06	Additional Point	Additional point: Supply must include Single Mode Fibre Patch cables compatible with quoted Transceivers of each switch. a) 25 nos. 100G patch cables of 10 mts. each b) 28 nos. of 100G patch cables of 15 mts. each. C) 12 nos. of 400G patch cables of 5 mts. each.
119	82	Category-II , Switch Type-03	Switch Type-03	Device should be based on industry standard virtual output queue based architecture to avoid head-of-line blocking issues.	Device should be based on industry standard virtual output queue based architecture or equivalent to avoid head-of-line blocking issues
120	83	Category-II , Switch Type-03	Switch Type-03	Device should support minimum 128-way ECMP.	Device should support minimum 64-way ECMP.
121	83	Category-II , Switch Type-03	Switch Type-03	Device should be able to support 256K IPv4 LPM routes.	Device should be able to support 256K IPv4 and 256K IPv6 LPM routes.
122	83	Category-II , Switch Type-03	Switch Type-03	Device should support ISIS (IPv4 & IPv6), OSPF (IPv4 & IPv6), BGP, BGP monitoring protocol	Device should support OSPF (IPv4 & IPv6), BGP, BGP monitoring protocol. ISIS (IPv4 & IPv6) is optional
123	83	Category-II , Switch Type-03	Switch Type-03	Device should have virtual output queuing based architecture, such that every input port will have a virtual output queue for every output port on the switch.	Device should have virtual output queuing based architecture, such that every input port will have a virtual output queue for every output port on the switch or equivalent.
124	84	Category-II , Switch Type-03	Switch Type-03	All proposed switches in the network should be able to run on same OS image and managed from single dashboard for simplified operations with minimal security exposure.	All proposed switches (Type-6, Type-3, Type-9, Type-1 and Type-5) in the network should be able to run on same OS image/version and managed from single dashboard for simplified operations.
125	80	Category-II , Switch Type-09	Switch Type-09	Device should support minimum 128-way ECMP	Device should support minimum 64-way ECMP
126	80	Category-II , Switch Type-09	Switch Type-09	Device should be able to support 256K IPv4 routes.	Device should be able to support 256K IPv4 and 256K IPv6 routes.
127	80	Category-II , Switch Type-09	Switch Type-09	Device should support symmetric Integrated Routed & Bridging(for both Type-2 and Type- and distributed anycast gateway functionality in VXLAN+EVPN fabric.	Device should support symmetric Integrated Routed & Bridging(for both Type-2 and Type-5 and distributed anycast gateway functionality in VXLAN+EVPN fabric
128	80	Category-II , Switch Type-09	Switch Type-09	Device should support ISIS(IPv4 & IPv6), OSPF(IPv4 & IPv6), BGP, BGP monitoring protocol	Device should support OSPF(IPv4 & IPv6), BGP, BGP monitoring protocol. ISIS(IPv4 & IPv6) is optional
129	79	Category-II , Switch Type-06	Switch Type-06	All proposed switches in the network should be able to run on same OS image and managed from single dashboard for simplified operations with minimal security exposure.	All proposed switches (Type-6, Type-3, Type-9, Type-1 and Type-5) in the network should be able to run on same OS image/version and managed from single dashboard for simplified operations.
130	80	Category-II , Switch Type-09	Switch Type-09	Additional Point	Additional point: Supply must include Fibre Patch cables compatible with quoted Transceivers of each switch. a) 15 nos. of 10G Multi Mode Patch cables of 10 mts. each b) 15 nos. of 10G Multi Mode Patch cables of 15 mts. each. C) 8 nos. of 100G Single Mode Patch cables of 5 mts. each.
131	88	Category-II , Switch Type-01	Switch Type-01	Device should support ISIS(IPv4 & IPv6), OSPF(IPv4 & IPv6), BGP, BGP monitoring Protocol.	Device should support OSPF(IPv4 & IPv6), BGP, BGP monitoring Protocol. ISIS(IPv4 & IPv6) is optional
132	89	Category-II , Switch Type-01	Switch Type-01	All proposed switches in the network should be able to run on same OS image and managed from single dashboard for simplified operations with minimal security exposure.	All proposed switches (Type-6, Type-3, Type-9, Type-1 and Type-5) in the network should be able to run on same OS image/version and managed from single dashboard for simplified operations.
133	90	Category-II , Switch Type-01 , 3-1	Switch Type-01	0°C to 40°C operating temperature and 10% to 90% relative humidity.	0°C to 40°C operating temperature and 10% to 85% relative humidity.
134	90	Category-II , Switch Type-04	Switch Type-04	Device should be able to support 64K IPv4 LPM routes	Device should be able to support 32K IPv4 LPM routes
135	90	Category-II , Switch Type-04	Switch Type-04	Device should support ISIS, OSPF (IPv4 and v6), BGP monitoring protocol.	Device should support OSPF (IPv4 and v6), BGP monitoring protocol. ISIS is optional
136	90	Category-II , Switch Type-04	Switch Type-04	Device should support graceful restart for ISIS, OSPF and BGP.	Device should support graceful restart for OSPF and BGP. ISIS is optional
137	90	Category-II , Switch Type-04	Switch Type-04	Device should support active-active layer-2 and layer 3 forwarding while running in VXLAN+EVPN based fabric.	Device should support VPC/MLAG for active-active layer-2 and layer-3 forwarding while running in VXLAN+EVPN
138	92	Category-II , Switch Type-04	Switch Type-04	0°C to 40°C operating temperature and 10% to 90% relative humidity.	0°C to 40°C operating temperature and 10% to 85% relative humidity.
139	85	Category-II , Switch Type-05	Switch Type-05	Device should be based on industry standard virtual output queue based architecture to avoid head-of-lineblocking issues	Device should be based on industry standard virtual output queue or equivalent based architecture to avoid head-of-lineblocking issues
140	86	Category-II , Switch Type-05	Switch Type-05	Device should support minimum 128-way ECMP.	Device should support minimum 32-way ECMP.
141	86	Category-II , Switch Type-05	Switch Type-05	Device should be able to support 256K IPv4 routes.	Device should be able to support 256K IPv4 routes and 256K IPv6 routes.
142	86	Category-II , Switch Type-05	Switch Type-05	Device should support ISIS (IPv4 & IPv6), OSPF (IPv4 & IPv6), BGP, BGP monitoring protocol	Device should support OSPF (IPv4 & IPv6), BGP, BGP monitoring protocol. ISIS (IPv4 & IPv6) is optional.
143	86	Category-II , Switch Type-05	Switch Type-05	Device should have virtual output queuing based architecture, such that every input port will have a virtual output queue for every output port on the switch.	Device should have virtual output queuing based architecture or equivalent, such that every input port will have a virtual output queue for every output port on the switch.
144	93	Category-II , Annexure-II , 1-12.a	Fabric Mgmt. features	12 a. The Fabric Manager must be physical appliance based. Fabric management infrastructure should be provisioned in HA mode at each of the sites and should cover all fabrics; the necessary software licenses should be bundled with the appliances	All the network switches (Types) should be from the same OEM and compatible with the Fabric Manager (given at 'Annexure-II Fabric Management Capabilities for Switches' under 'Category-II' of 'Section-V' . Fabric Manager in HA to be deployed across DC and BCP. Separate Fabric Manager in HA is required at DR. However, Bidder shall ensure that the Fabric Manager is deployed in HA at each location (Delhi and Bengalure). Please note that the Fabric Manager requirements in Internet and MPLS are isolated (Ref. Page no.92, Annexure-II Fabric Management Capabilities for Switches, Serial no.1 , Specifications Point no. 12 b

Note: Replies to the Queries and Clarifications being Published seperately.