

UNIDADE DE GESTÃO DE PROJECTOS ESPECIAIS

CABO VERDE TECHNOLOGY PARK – PHASE II

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IFB Number: 011/CVTP-II/UGPE/2024
Purchaser: Unidade de Gestão de Projectos Especiais (UGPE) | Ministério das Finanças e do Fomento Empresarial
Project: Cabo Verde Technology Park (CVTP) – Phase II
Contract title: Supply, Installation of IT Equipments and Training for the Technology Park Data Center (DC3): DataCenter IT DataCom – Phase II
Country: Republic of Cabo Verde
Loan No. / Grant No.: 2000200005602
Procurement Method: Open Competitive Bidding (International)
OCBI / LCB No: GDS3

CLARIFICATION # 4

Question no.	Page	Section	Question	Answer
Q 12	Page 88 Eligibility of the Bidder Under the ADB & NTF Financing <...> (c) Joint Ventures and Associations: An unincorporated joint venture, partnership, or association, shall be eligible if more than 50% of the value of its works and/or services is executed by its members satisfying the eligibility requirements for individuals or corporations.	Section V - Eligible Countries	Please confirm that in the case of a joint venture (JV) consisting of two members, if one member of the JV undertakes more than 50% of the obligations and satisfies the eligibility requirements, this will be considered as meeting the eligibility requirement.	Please refer paragraph c) of point 2 of Eligibility of the Bidder Under the ADB & NTF Financing of Bidding documents.
Q 13	Page 49 2.1. Evaluation Criteria (Other Factors) (ITB 35.6), table “Technical Evaluation Criteria for Qualification” point 5 “Must Meet Criteria” states that Site Survey is Mandatory	Section III – Evaluation and Qualification Criteria	We have not found any information regarding the arrangement of a pre-bid meeting. Please clarify if the site survey is mandatory as stated in the technical evaluation criteria. If so, kindly provide details on possible pre-bid meeting dates and allow a reasonable amount of time in advance for travel to Cabo Verde.	Please see Section III - Evaluation and Qualification Criteria of Amendment no. 02 to Bidding document 011/CVTP-II/UGPE/2024: Supply, Installation of IT Equipments and Training for the Technology Park Data Center (DC3): DataCenter IT DataCom – Phase II
Q 14	Page 38 ITB 22.1 The deadline for Bid submission is: Date: October 23, 2024 Time: 3:00p.m.	Section II – Bid Data Sheet (BDS)	We kindly request a one-week extension of the submission deadline to allow us to adjust our proposal based on forthcoming responses, and an additional week to complete the site survey (if deemed mandatory).	The new deadline for submission bid is extend to November 07, 2024, Time: 3:00p.m. (See Amendment no. 03 to Bidding document 011/CVTP-II/UGPE/2024).
Q 15	Page 51 Section III – Evaluation and Qualification Criteria / 3.1. Qualification Criteria (ITB 37.1): (i) The audited balance sheets or, if not required by the laws of the Bidder's country, other financial or Bank statements acceptable to the Purchaser, for the last 3 years, namely years 2020,	Section IV – Bidding Forms. Average Annual Turnover. Form FIN – 3.2 Section IV – Bidding	Please clarify the period for which audited balance sheets and average annual turnover need to be provided. The requirements mention the last three years, but specifically list 2020, 2021, and 2022.	Yes, that's correctly.

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	<i>2021, 2022 shall be submitted demonstrating the current soundness of the Bidder's financial position and availability of adequate financial resources to perform the contract.</i> <i>(ii) For Bid evaluation to be performed Item-wise as per ITB 1.1, ITB 14.6, 14.7 and ITB 35.2 (a): <u>The Bidder shall demonstrate the minimum average annual financial turnover of 3 times the total bid price of all items for which bid has been submitted as certified payments received by the Bidder since Jan. 1- 2021 for contracts in progress and completed for all Goods manufactured and supplied divided by 3 number of years and part thereof elapsed since Jan. 1 2020. If the average annual turnover amount is less than the required turnover amount for all items for which the Bidder is successful, limitation will be placed on the number of item(s) that will be awarded to the Bidder and Purchaser will decide which item or items will be awarded based on the most economical combination that will result in the lowest evaluated cost to the Purchaser for all items.</u></i>	Forms. Financial Situation. Form FIN – 3.1		
Q 16	Page 118: Network Infrastructure <...> The solution should follow the Software Defined Networking (SDN) approach aligned with the existing installation on DC1 in order to fully integrate the two datacenters. The network services and policies must be implemented and maintained through a central entity such as an SDN controller or policy manager.	Section VII - Schedule of Requirements	Please provide information on the existing SDN solution, including details on the hardware and software in use at DC1, so that we can propose a compatible architecture.	Currently, SDN have not been deployed. Please refer to the reference model on page 119, and the global network architecture on page 123.
Q 17	Page 105 iSCSI Switch – 2 units - Fixed Form factor switch (1RU) - Smart buffer capability (AFD / DPP). - Dual AC Power supplies. - 6 ports 40G/100G QSFP28 and 48 10/25GE SFP+ interfaces. - Flexible port configurations – 1/10/25/40/100G.	Section VII - Schedule of Requirements	1. It appears that the requirements miss iSCSI-related features, such as support for QoS, Flow Control, Jumbo Frames, low latency, Link Aggregation, and iSCSI optimization. Please confirm that the provided set of features in the requirements is the complete list that must be met by proposed iSCSI switches. 2. Please confirm whether dedicated iSCSI switches are required, or if it is possible to allocate the necessary ports for iSCSI communication in aggregation switches to avoid extra devices.	The bidder should propose iSCSI switch that supports features from the industry standard datacenter class of iSCSI switches, including, but not limited to the features suggested. The iSCSI switch does not have to be a dedicated one.
Q 18	Page 106 PacketShaper – 1 unit - At least 5 Gbps Shaping with the possibility of upgrading up to 10 Gbps with license upgrade,	Section VII - Schedule of Requirements	Could you please elaborate on the usage scenarios for the device?	The packet shaping device will be used to assign/limit different bandwidth amount for different application's traffic.

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	- Interfaces with bypass capability - Redundant power supplies - Solution should be provided with a right to use license (perpetual license for usage)			
Q 19	Page 106 Firewall – 2 units - Equipments must integrate with the existing solution on DC1 to provide active-active between DC1 and DC3 on both security layers Page 116 Network infrastructure <...> Currently at DC1 the firewall layer is comprised of two levels of firewalls as outlined: • 2 x Palo Alto 5250 • 2 x Fortigate 1101E It is mandatory that the solution provided allows for a seamless transition (Active-Active Mode) and failover however other solutions with that allow for similar functionality, with the lowest possible points for manual interaction or time to recovery.	Section VII - Schedule of Requirements	Please clarify what type of integration is required. Should the supplier provide a single cluster of firewalls for DC3, or should they provide two separate firewalls that can integrate with the existing two levels of firewalls - Palo Alto and FortiGate - currently in place at DC1?	The bidder should provide two pairs of firewall, being one pair of Palo Alto and one pair of Fortigate that should work in cluster with the clusters of firewalls in DC1.
Q 20	Page 104-105 Core Switch – 2 units - Must have minimum of one supervisor / controller per chassis - Must be able to connect to other chassis for redundancy - Must come with the following line cards: - o Management / Supervisor - o 1 x 48 port 10/100/1000 RJ45 - o 1 x 48 port 10GbE SFP+ - o 1 x 20 port 25GbE and 10 port 10GbE SFP+ - o 1x 12 ports 40GbE Page 120 Modular Chassis Switches: • Must include four chassis with a minimum of 7 slots per chassis • Must have minimum of one supervisor / controller per chassis • Must be able to connect to other chassis for redundancy • Must come with the following line cards: - o Management / Supervisor - o 1 x 48 port 10/100/1000 RJ45 - o 1 x 48 port 10GbE SFP+ - o 1 x 20 port 25GbE and 10 port 10GbE SFP+ - o 1x 12 ports 40GbE Must be configured with the max number of power	Section VII - Schedule of Requirements	The requirements state that Core Switches must be of modular chassis architecture, but port requirements can also be met by stacking several enterprise-grade switches designed for data centers. Please confirm whether solution of stackable switches will be considered equivalent to modular chassis.	Please refer to the Document. It specifies a modular chassis switch.

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	supplies configured			
Q 21	Page 100-101 Storage – 2 units Performance - Production/Disaster Recovery compute storage (NVME): -- Block Storage (iSCSI) -- File Storage (CIFS, NFS) -- Object Storage (Object Storage/S3) General - Production/Disaster Recovery compute storage (NLSAS): -- Block Storage (iSCSI) -- File Storage (CIFS, NFS) -- Object Storage (Object Storage/S3) Page 133 Storage Requirement <...> The minimal total storage for DC3's disaster recovery storage space is 200 TB (NVME) and 1PB (HDD/NLSAS) usable space. These values should be calculated without efficiencies (deduplication/compression). However, these features should be made available and valued. The minimal total storage for DC3's offsite backup facility is 2PB (NLSAS) usable space.	Section VII - Schedule of Requirements	1. Regarding performance and general data allocation: As only two storage units are listed in the schedule, is supplier expected to provide one storage unit for performance data and another for general data? Or should he provide two identical storage units that span both performance and general data internally? 2. Regarding number of storage units: Is it permissible to quote more than two storage units? Regarding separate storage units for different protocols: Is it allowed to propose separate storage units for different protocols, such as block, file, and object storage?	Please consider the physical unit's quantity in the "List of Goods" (p99) and page 133/134 for a detailed information about storage requirements and architecture.
Q 22	Page 134 Storage Requirement <...> Architecture The architecture should be based on traditional storage arrays providing the array provides the following services out of the box and fully licensed.	Section VII – Schedule of Requirements	Could you please elaborate on the term "traditional storage array"? Is storage architecture based on distributed scale-out storage acceptable? We would like to kindly point out that in the previous tender release in 2021, distributed scale-out storage was permitted as an alternative to scale-in architecture, especially considering that you are seeking for an open-source cloud solution.	The tender requirements specify a traditional storage array, characterized by a centralized architecture and controller-based management.
Q 23	Page 99 Compute – 32 units - rack servers for general virtualization – 30 units - rack servers for database recovery duty – 2 units Page 139 Compute - sixty (60) rack servers for general virtualization - Four (4) rack servers for	Section VII – Schedule of Requirements	Please clarify the number of compute servers to be quoted for general virtualization and database recovery duty, as different quantities are indicated in various requirement tables.	Please consider 32 for compute servers

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	databaserecovery duty.			
Q 24	"spine switch / Spine Switch Technical Requirements ● 40/100GE uplink ports (fabric uplinks). ● At least 32 x 40/100GE ports. ● Latency < 1.5 microseconds ● Buffer (MB) > 30 ● Fixed Form factor switch (1 or 2 RU) ● Flow Table for Analytics, Fabric Insights, Netflow. ● Smart buffer capability (AFD / DPP). ● Dual AC Power supplies. ● Port Side Intake "		"The bidding document mentioned some technical requirement which is belong to specific vendor's product, such as AFD, DDP, etc. By requiring AFD and DPP, do you mean that ""Smart buffer capability (flexibly adjusts the buffer allocation for small and big traffic flow queues and schedules)"" is required on the network."	The description "Smart buffer capability (AFD / DPP)" can be replaced by "Smart buffer capability (buffer management separate the elephant and mice flow into different queue, and support different queueing scheduling algorithms on each queue.)"
	"Leaf switch / Leaf Switch Technical Requirements ● Fixed Form factor switch (1RU) ● Flow Table for Analytics, Fabric Insights, Netflow. ● Smart buffer capability (AFD / DPP). ● Dual AC Power supplies. ● 6 ports 40G/100G QSFP28 and 48 10/25GE SFP+ interfaces. ● Flexible port configurations – 1/10/25/40/100G. ● Latency < 1.5 microseconds ● Throughput (Tbps) > 3.5 ● Buffer (MB) > 30 ● Port Side Intake"			
	"iSCSI Switch: Fixed Form factor switch (1RU) - Smart buffer capability (AFD / DPP). - Dual AC Power supplies. - 6 ports 40G/100G QSFP28 and 48 10/25GE SFP+ interfaces. - Flexible port configurations – 1/10/25/40/100G."			
Q 25	"PacketShaper: ○ At least 5 Gbps Shaping with the possibility of upgrading up to 10 Gbps with license upgrade, ○ Interfaces with bypass capability ○ Redundant power supplies ○ Solution should be provided with a right to use license (perpetual license for usage)"		"Since packetshaper is a unique product name of vendor, which leads to vendor and model binding in bidding documents. Do you mean that you need Traffic Shaping and Load Balancing Equipment ?"	We have correct the description, to be traffic shaping, instead of packetshaper present in the TDR.
	"Internet Connectivity: Internet access should be implemented in DC3. This infrastructure comprises the following components: ● Routers acting as Internet Gateway (IGW). ● Packet shaper. ● DDOS protection system. ● Perimeter Firewall. ● ISP Circuits."			
	Packet shaper: The solution must include a packetshaper in DC3. Required specifications but not limited to:			

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	• Visibility, Control and Monitoring. • At least 5 Gbps Shaping with the possibility of upgrading up to 10 Gbps with license upgrade. • Interfaces with bypass capability. • Redundant AC power supplies. The supplier must propose the solution for the insertion of the device in the network and must propose any additional equipment if necessary. Solution should be provided with a right to use license (perpetual license for usage).			
Q 26			Regarding the point on the tender on the role of each datacenter DC1 and DC3 it's written in the same document two different topologies. On page 116 from the document there are conflicting points: “The requirement is that DC1 and DC3 be enabled to work as an extension of each other and should the need arise to act as failovers of each other respectively.”, which points to a failover topology. “It is mandatory that the solution provided allows for a seamless transition (Active-Active Mode) and failover however other solutions with that allow for similar functionality, with the lowest possible points for manual interaction or time to recovery.”, which points to an active configuration with L2/L3 being “transversal” to both datacenters. Which is the requirement for this point? Also, on the same point what is the expected integration/extension on all of the various layers of software / platforms on both DC’s, that NOSi expects to have by the end of the project?	The solution should work in active-active mode. In case of downtime in one of datacenters, the other should be up, providing services. Please refer to the designs in the reference document for information about the expected integration/extension. The phrase on the original document have unfortunately been poorly phrased. The requirement is “The requirement is that DC1 and DC3 be enabled to work as an extension of each other and should the need arise to act as failovers of each other respectively.”, which in fact points to a failover topology. It is valued nevertheless that an L2 extension be created between both datacentres to enable the usage of replication, less important workloads and so forth. It is however highly valued that the maximum number of integrations to enable a smooth transition from services from one datacentre to the other be provided and be put in place. This criteria is also applicable to the other items on this bidding.
Q 27			It is understood and clear that the security perimeters have been outlined and that the choice of brands to be a specific point enable the level of integration. Can NOSi provide a list of the roles these firewalls provide on a top level? (e.g: Is this a traditional two-layer approach in which each firewall represents a specific perimeter (internal/external)?)	At this point the FG1101E and PA5250 contain both internal and external perimeters, however the FG1101E services are undergoing migration to the PA5250, so the outcome is the 5250’s having both perimeters phasing out the FG systems.

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Q 28			Given the requirements outlined what is the technology and bandwidth by which both datacenters will be connected? On page 126 its described as “2 X 10 GbE link (DWDM) to DC1.”. Are these values guaranteed? This question is particularly relevant as to enable active-active communication or a L2/L3 extension with replication services occurring at various levels this question is widely relevant as it can be an issue with the overall project goal. Failure on this will have a ripple effect on all the project milestones and defined targets.	The solution should consider that as the maximum bandwidth considered at this stage. As explained before the topology to be used is a failover topology with the ability to run workloads on the “failover” datacenter while dormant as a means to improve resource consumption.
Q 29			Will NOSi require a single pane of glass for managing the various firewalls? If so, then will it be multi-vendor or will a per manufacturer approach suffice?	A per manufacturer approach will suffice, the management platform must enable management of the firewall systems as well as operations between them and should be redundant.
Q 30			Will Virtual Firewall Systems be allowed?	No. Only physical firewalls will be considered, also on this note they should be considered with a minimal of 30 virtual systems within themselves licensed with at least plus 50% of additional headroom for growth.
Q 31			Regarding the storage chapter multiple storage units are defined. It is out understanding that to maximize the TCO and ROI there should be only be three storage units each providing by itself the protocols required without the usage of further hardware or software that can increase maintenance costs in the future. Is our assessment correct?	Yes it is correct the storage units must by themselves provide support for the protocols outlined.
Q 32			Given that we are nearing the end of 2024 and given that new Gartner Magic Quadrant for Primary Storage have been issued does the requirement remains the same ?	The scope hasn’t changed in any relevant way so we hold to 2023 charts.
Q 33			There are conflicting refences on the document to 60 + 4 servers and 30+2 servers. Which should we consider as valid	The values to be considered is thirty (30) servers for the cloud (openstack) platform and two (2) for the database virtualization platform.

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Q 34			With the “Summary of Technical Specification” containing details regarding to-be network architecture. If the SDN approach is to integrate both DC1 and DC3, are bidders permitted to obtain current design and/or schematic of DC1 OSI model pertaining to Transport Layer (L4), Session Layer (L5), Presentation Layer (L6), and Application Layer (L7)?	Currently, SDN have not been deployed. Please refer to the reference model on page 119, and the global network architecture on page 123.
Q 35			If the Contract is worth \$15 million, the bidder must demonstrate a "minimum average annual financial turnover" or profit of \$45 million over the last 3 years or each consecutive year starting from Jan. 1, 2020 to Jan. 2023?	Please refer to point (ii) 3.1 Qualification Criteria (ITB 37.1)
Q 36			TCO consists of acquisition cost, implementation cost, operational costs, maintenance cost, training cost, downtime costs, and disposal cost. Should the licensing cost only be applicable to "architecture" and not "platform requirements" when incorporating the TCO costs? Specifically, in the maintenance cost?	TCO includes licensing costs. Please refer to page 133 for further clarification regarding the cloud platform licensing costs
Q 37			With the “Summary of Technical Specification” containing details regarding to-be network architecture. If DC3 site is expected to operate in integration with DC1, are bidders permitted to know the current SDN layer components and hypervisors that are currently enhancing network and virtualization in DC1? For example, are Bidders permitted to obtain any design or schematic of the current SDN Control Plane, Data Plane, application plane, SDN Controller, and protocols for DC1? Including current network virtualization and integration with SDN at DC1? Or are all bidders expected to leverage the to-be designs as captured in the IFB?	Currently, SDN have not been deployed. Please refer to the reference model on page 119, and the global network architecture on page 123.
Q 38			Regarding the eligibility of the Bidder, when it states that "...person is eligible if he or she is a national of a Member Country of the African	Please refer the link New procurement framework African Development Bank Group (afdb.org)

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			Development Bank (ADB). Does that mean the bidder must be a Cape Verdean national or a national of any of the 81 member countries of ADB?	
Q 39			It is requested for Data Protection that: o The bidders are required to make available licensing for added capacity needed for this extension to the existing backup solution. 600 additional workloads (e.g: VM's) are to be made available with this contract. Can these additional licenses be provided in the DC3 backup solution	Please consider "backup and restore platform" on pages 117/118
Q 40	We kindly ask you a postponement for the deadline to receive the offer for 1 month because the offer production require more time in order to provide the requested documentation.			The new deadline for submission bid is extend to November 07, 2024, Time: 3:00p.m. (See Amendment no. 03 to Bidding document 011/CVTP-II/UGPE/2024).
Q 41	DC3 is suddivied in 2 building with 32 server and 1 storage each? The backup will be destinated in only one building?			Please consider 32 compute servers
Q 42	Server quantity: how much server we need to supply in total? 32 or 64? Is it supposed to supply server for two different buildings and any building have 32 servers?			Please consider 32 compute servers
Q 43	C13 Power mode: which standard we should give?			It should be C13 to C14, PDU Style
Q 44	Production/Disaster Recovery: Is not clear the Nr. Of Storage system they want, from my understanding they need 2 Storage for Production/DR, one 200 TB NVMe and one 1PB HDD + 2PB Backup. Is not clear if customer wants 2 Hybrid storage only with 200TB NVMe tier and 1PB HDD(1 for site) + 2PB backup.			Please consider the physical unit's quantity in the List of Goods (p99) and page 133/134 for a detailed information about storage requirements and architecture.
Q 45	Backup: what does it means 10x60?			It means 10 (pack) licenses which cover 60 Vms each (workload of 600). The additional licenses should be compatible with DC1 backup solution

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Q 46	License: Is not clear about the licensing requested: you are demanding for 600 additional workload, is it something related to software part?			Yes, the additional licenses should be compatible with DC1 backup solution
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UGPE, october 30, 2024