PROJECT IMPLEMENTATION UNIT (PIU)
PUNJAB URBAN LAND SYSTEMS ENHANCEMENT (PULSE)
Punjab Land Records Authority (PLRA)
Government of the Punjab
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ADDENDUM TO RFB DOCUMENT

FOR THE PROVISION AND INSTALLATION OF CORE ICT EQUIPMENT FOR PULSE DATA CENTER (PRIMARY & DR SITE)

(PURSUANT TO ITB CLAUSE 7 & 8)

Project Implementation Unit, Punjab Urban Land Systems Enhancement Project- (PULSE) has advertised Request for Bids (RFB) for the Provision and Installation of Core ICT Equipment for PULSE Data Center (Primary & DR Site) under PULSE (PK-PLRA-404724-GO-RFB/2023-24) Published in The Nation and Jang vide IPL No. 7514 Dated 10th August 2024. The Bidding Documents and SPN are available at PULSE Website. The following amendments are hereby made in the RFB Documents:

Section III - Evaluation and Qualification Criteria

RFB Reference	Existing	Amendment
Qualification Criteria (ITB 32.1) **1 (b) Specific Experience**	The Bidder shall demonstrate that it has successfully completed at least One (1) contract within the last seven (7) years prior to bid submission deadline, each with a value of at least PKR 850 million that have been successfully and substantially completed and that are similar in nature and complexity to the Goods and Related Services under the Contract. For a joint venture, this requirement may be met by all members combined. *Note: The value of contracts executed by different JV members shall not be combined to meet the threshold	The Bidder shall demonstrate that it has successfully completed at least two (2) contracts within the last seven (7) years prior to bid submission deadline, with accumulative value of at least PKR 850 million that have been successfully and substantially completed and that are similar in nature and complexity to the Goods and Related Services under the Contracts. For a joint venture, this requirement may be met by all members combined.

Section VII - Schedule of Requirements

Technical Specifications

RFB Reference Component	Existing	Amendments
Next Gen Firewall/Interface Requirement	14 x 10G/1G RJ45 interfaces POE (RFB, page # 108, Section VII).	14 x 10G/1G RJ45.
SAN	Configured for storing 300TB useable data (Raid 6) before using efficiency factor committed by the OEM. (RFB, page # 98, Section VII).	Configured for storing 300TB useable data (Raid 6) before using efficiency factor at least 4:1 data reduction guarantee from OEM.

NAS	Each Storage Controllers/ Storage node having 2 ports of 25 GbE. 6 controllers' minimum requirements. (RFB, page # 101, Section VII).	Each Storage Controllers/ Storage node having 2 ports of 25 GbE or equivalent. Scale out controllers.
DPS	180TB front-end or 20 Socket license. (RFB, page # 106, Section VII).	30 TB front-end or 20 Socket license.
Cyber Recovery Vault	1xServer,2 x 32 cores,192 GB RAM,10 x 2.4 TB SAS, 2xDual Port 10 Gbps, 2x25Gbps Network Card 1xServer,2 x 32 cores,384 GB RAM,10 x 2.4 TB SAS, 2xDual Port 10 Gbps, 2x25Gbps Network Card 1xServer, 1 x 6 Cores, 32 GB RAM, 2 x 480 GB SSD,2 x 960 GB SSD, 2xDual Port 10 Gbps, 2x25Gbps Network Card (RFB, page # 107, Section VII).	1xServer,2 x 32 cores,192 GB RAM,10 x 2.4 TB SAS, 2xDual Port 10 Gbps, 2x10Gbps Network Card 1xServer,2 x 32 cores,384 GB RAM,10 x 2.4 TB SAS, 2xDual Port 10 Gbps, 2x10Gbps Network Card 1xServer, 1 x 6 Cores, 32 GB RAM, 2 x 480 GB SSD,2 x 960 GB SSD, 2xDual Port 10 Gbps, 2x10Gbps Network Card.
Blade Chassis	Each blade switch support independent connectivity to external ToR switch at up to 800 Gbps. (RFB, page # 94, Section VII).	Each blade switch support independent connectivity to Converged or ToR switch at up to 600 Gbps or higher.
	Each blade chassis must support 1+1 blade switches within the chassis providing up to 1.6 Tbps aggregate server backplane connectivity bandwidth (200 Gbps each blade) (RFB, page # 94, Section VII).	Each blade chassis must support 1+1 blade switches within the chassis providing up to 1.6 Tbps aggregate 200Gbps Internal Connectivity to chassis backplane bandwidth capability.
Blade Servers	Blade should support six front-accessible, hot-swappable SAS/SSD /NVMe hard drives. Two (2) 960GB SATA SSD bootable drives in RAID 1 configuration. (RFB, page # 94, Section VII).	Blade should support minimum 4 front-accessible drives, hot-swappable SAS/SSD /NVMe hard drives. Two (2) 960GB SATA SSD bootable drives in RAID 1 configuration.
	Proposed Blades NIC card should allow up to 512 virtual machines to access the same card with built-in prioritization and quality of service (QoS) (RFB, page # 95, Section VII).	Proposed Blades NIC card should allow up to 512 virtual machines to access the same card with built-in prioritization and quality of service (QoS) **OR** Converged NIC will be acceptable with 50Gb Converged Network Adapter per Blade or higher. Minimum 50Gb Converged Adapter per Blade (LAN & SAN) with internal blade chassis interconnects supporting LAN/SAN traffic or via external ToR unified switching as fabric interconnect for LAN /SAN traffic. Should support SR-IOV, RDMA offload to support large number of VM's with reduced CPU utilization.

ToR	TOR Switch or Option II- Chassis based converged fabric . (RFB, page # 95, Section VII).	ToR (Top of Rack) based, and blade chassis based converged fabric are acceptable. For Chassis based converged fabric, minimum requirements are as follows for Multi frame configuration both for PR and DR site: (2 x Active/Active Chassis for PR Site and DR Site) Specs for Chassis based converged fabric: Active/Active Blade Chassis infrastructure at each site should support network switch with minimum 50Gb downlinks and 100Gb uplink to DC switch Redundant Interconnect modules shall be integrated within the chassis such that uplinks from the chassis can be directly connected to core LAN/SAN switches Active /Active Chassis infra per site must provide 4 x 100G fiber uplinks with redundancy to Core Network Switches with LC cables. Must provide 4 x 32GB SFP+ uplinks with redundancy to Core SAN Switches with 15m LC cables. Should support multi-module link aggregation (MLAG) for resiliency against interconnect failure.
Load Balancer	Optimize the availability, user experience, performance, and security of Enterprise Application Delivery. (RFB, page # 112, Section VII).	Optimize the availability, user experience, performance of Enterprise Application Delivery.
	Offer real-time and historical information about appliance, which includes the logical topology of real-server pools, user/application data-analytics, security. (RFB, page # 112, Section VII).	Offer real-time and historical information about appliance, which includes the logical topology of real-server pools, user/application data-analytics.
	Include data analytics to help you track web server usage from a page hit, response time, traffic volume, and attack point of view.	Include data analytics to help you track web server usage from a page hit, response time, traffic volume.

	(RFB, page # 112, Section VII).	
	Application aware appliance – Should be application-aware appliances to eliminate performance bottlenecks, reduce application deployment complexity and seamless application integration. (RFB, page # 112, Section VII).	Deleted.

All other terms & conditions shall remain same. Consider this addendum, the part of RFB and submit bid accordingly.

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