

**GOVERNMENT OF PAKISTAN FEDERAL
BOARD OF REVENUE**

[Pakistan Raises Revenue Program]

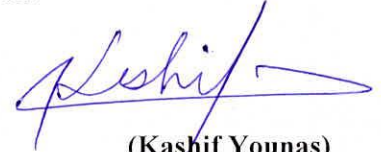
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C.No. 1(7)Addl.Dir(P&F)/PO/2023/59356-R

Date: 5th April, 2024

Subject: **Minutes of the 2nd Pre-Bid Meeting: Establishment of Data Center Infrastructure at Islamabad and Lahore (Tender-3750) – RFB No. 1(7)Addl.Dir(P&F)/PO/2023 (PK-FBR-402370-GO-RFB)**

1. In the 2nd pre-bid meeting, held on 01-04-2024, bidders were instructed to share any further queries in writing, especially if any clause is restricting competition OR is brand specific within prescribed time so that the clarification or amendment be made accordingly. Replies to the queries shall be shared with bidders by placing Minutes of the Meeting and addendum on FBR's website (<https://fbr.gov.pk/tenders>), through email after visit to Datacenter sites.
2. The Chair elaborated on some of the queries related to the bidding process and contractual requirements and emphasized to the prospective bidders that they should carefully go through all the sections of the Bidding Document and incorporate all the clarifications provided by FBR through Minutes of the Meeting and addendum(s) in their bids for submitting a responsive bid.
3. The queries raised by the bidders, FBR's response to the same and the status regarding their incorporation into the Bidding Documents are tabulated as **Annex-II**.



(Kashif Younas)
Additional Director
(Procurement & Finance), PRRP

ANNEX-I

Sr.No	Name	Designation
1.	Mr. Ardsheer Saleem Tariq	Member Reforms & Modernization
2.	Mr. Muhammad Khalid Jamil	Director (Program Office)
3.	Mr. Zain-ul-Abidin Sahi	Chief IT (Systems)
4.	Mr. Kashif Younas	Additional Director (Procurement & Finance)
5.	Mr. Sardar Omer Sharif	Secretary (IT)
6.	Mr. Amjad Khan	Second Secretary (IT)
7.	Mr. Abdul Rehman Shahid Anwar	Procurement Specialist Program Office
8.	Mr. Mazhar Iqbal	Senior Manager Datacenter - PRAL
9.	Mr. Muhammad Riaz Alam	Sr. Network Administrator – PRAL
10.	Mr. Zubair Khan	Infrastructure Engineer -PRAL
11.	Mr. Shahzad Ali Shah	Contract Management Specialist
12.	Munib Khawaja	Consultant-DWP
13.	Ashar Ali	Consultant-DWP
14.	S.M. Asif Ali	Consultant-DWP
15.	M. Zahid Hussain	Consultant-DWP

Establishment of Data Center Infrastructure at Islamabad and Lahore**RESPONSE TO QUERIES**

Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
1.	136	68. LT Distribution Boards	Kindly specify, 1. Imported Complete Type Tested Panels from OEM: Completely Assembled and Type Tested Panels from OEM's factory imported into Pakistan as a whole unit?	All Components (switchgear, busbars, cubical) shall be imported from original OEM and can be assembled locally by authorized channel partners.	Responded
	201	197. LT Distribution Boards	2. Locally Assembled Type Tested Panels: Separately imported components assembled in Pakistan by Authorized OEM Assembler?		
2.	131	67. Generator	The BOQ specifies Form 3, but the Specifications mentions Form 2, kindly specify clearly, which is required for each Switchboard and DB	For RTO Islamabad: Type Tested panels with minimum Form-3B, Low Voltage distribution Panels for Generator, Transformer, ATS, Power incoming and outgoing distribution on complete floor	Responded
	227	Equipment Details - RTO Islamabad Site			
3.	130	67. Generator	Kindly specify which is required? ATS or AMS? And kindly explain why it is specified in the Generator Section?	ATS required	Responded
	131				
4.	195	196. Generator	Kindly specify which is required? ATS or AMS? And kindly explain why it is specified in the Generator Section?	ATS required	Responded
	195				
5.	111	31. Cooling Units for Data Center	CFD Analysis requires complete information, the RFP has gaps in information regarding the Load	IT load is already shared, Each bidder has to share CFD as per quoted cooling units	Responded

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
	175	148. Cooling Units for Data Center	<p>specified in the previous set of Queries.</p> <p>Secondly, CFD Analysis carries a cost which has to be borne by the Selected Bidder after signing of contract, and since the Unit Sizing has already been done by the Consultant, we would like to inquire how was the Units sized if no CFD Analysis was performed?</p> <p>We request revision is considered of this part.</p>	keeping in view Ashrae guidelines.	
6.	161	110. Interior Designing Work	3D RENDERS/Video carries a cost and should be furnished by the Selected Bidder at the time of contract signing. Kindly consider revision.	Multiple vendors have their in-house skill set available. If you have cost issue then share 2D layouts as per your proposed design. 3D renders will be required after contract signing.	Responded
7.	225	233. Interior Designing Work			
8.	149	80. Access Control System	This is part of the Fire Door and not Access Control System, kindly revise	Door panic is optional feature of ACS controller.	Responded
9.	149		Where is this Emergency Door Release required?	Feature should be available in ACS controller/software	Responded
10.	149		This required for all Doors?	For data center facility main entrances 2x doors	Responded
11.	215	209. Access Control System	This is part of the Fire Door and not Access Control System, kindly revise	Door panic is optional feature of ACS controller.	Responded
12.	215		Where is this Emergency Door Release required?	Feature should be available in ACS controller/software	Responded
13.	215		This required for all Doors?	For data center facility main entrance door	Responded
14.	99	17. IT Racks	This is an optional feature, only IC/RFID Card option is available.		Responded

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
	163	112. IT Racks	Kindly revise.	Multiple authentication features are required, at least dual factor authentication	
15.	98	17. IT Racks	Please confirm which optional accessories like cable managers are required vertical (0U) or Horizontal ?	Both	Responded
	162	112. IT Racks			
16.	98	17. IT Racks	Standard racks are design for 1600 KG which is sufficient , please allow 1600 KG , as allowed in Rated 3 DC	1600Kg is accepted	Responded
	162	112. IT Racks			
17.	98	17. IT Racks	Standard racks are design for 1000 KG which is sufficient , please allow 1000 KG , as allowed in Rated 3 DC	1000KG is accepted	Responded
	162	112. IT Racks			
18.	98	17. IT Racks	Weight bearing is designed based on manufacturers own working , this mirco level requirement , weight bearing structure should be able to support the committed static and dynamic load of 1600 and 1000 KG respectively , please allow	Allowed but do share quoted product thickness	Responded
	162	112. IT Racks			
19.	98	17. IT Racks	These are micro-level requirements , every manufacturer has it own rolling and forming process, and own procedures to meet compliance and certification	Allowed and Please share certificates to confirm safety, EMC and ROHS compliance	Responded

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
	162-163	112. IT Racks	requirement , our manufacturer provides CE certification , ROHS Compliance , TTL and SGS etc which provides for Safety , EMC and ROHS directive for environment so please allow		
20.	99	17. IT Racks	This is optional accessories not standard one, moreover your DC will have top cable path not bottom , consider removing this requirement, if at all required please specify location and number for racks for which it is required	Top cable is required, bottom is optional if available	Responded
	163	112. IT Racks			
21.	99	17. IT Racks	Vertical cable organizers is optional features for 800 mm racks , please specify how many vertical cable organizers are required per Rack	A minimum of two and maximum of four	Responded
	163	112. IT Racks			
22.	99	17. IT Racks	IP ratings are required in self-contain architectures and are usually not required for these types of IT racks where perforation is required for air flow ,Moreover you have also asked for perforation in front and rear doors so please remove this requirement	It seems to be an understanding issue, IP 20 rating is required and All leading brand offers it.	Responded
	163	112. IT Racks			
23.	99	17. IT Racks	Units are either shipped as Assembled Racks (Fully Assemble on Pallet) or Flat packed in 5 Cartons: 1. Front Door (1x) & Front Door Frame (1x)Top Panel (1x), Accessories Box (1x) 2. Rear	Please opt any one of them, Further please concentrate on shared compliance criteria (M/C)	Responded
	164	112. IT Racks			

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
			Door (1x) & Rear Door Frame (1x)3. EIA rails (4x), PDU tray (2x)4. Horizontal Beam (4x for 42U, 6x for 48U) 5. Side Panel (4x) , please confirm which option you require in this requirement specification		
24.	102	24. Rack Power Distribution Unit	We offer LED Display PDU with Upgradeable Hot Swappable IMD having LED display along with sensors and SNMP support, please allow Moreover there are two types of intelligent PDU: 1- Monitored (Unit Level EC or Outlet Level EC) 2-Switched (Unit Level EC • Outlet Level EC) Please also confirm the type (monitoring or switched) and monitoring level of the selected type (level or branch level)?	LED display is accepted. You are asking unnecessary explanation whereas requirement is vivid and clear. PDU Type: Metered & monitored	Responded
	166	129. Rack Power Distribution Unit			
25.	148	79. Security & Surveillance System	The focus distance is very specific and limits participation, kindly allow 0.2 m to 0.5m	0.2 to 0.5m is allowed	Responded
	213	208. Security & Surveillance System			
26.	100	23. Hot / Cold Aisle Containment System	The aisle width is approximately 924 mm—a configuration well-suited for hot aisle containment where racks are installed front to rear, and the rear aisle contains the hot air generated by the equipment i.e the rear is contained, while the front remains open space. However, our design is cold aisle containment. Here, racks and equipment are positioned front to	Hot aisle containment is required. All leading OEMs like Vertiv, Huawei, Schneider etc offers hot & cold aisle containment and comply 3-6 feet range.	Responded
	164	120. Hot / Cold Aisle Containment System			

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
			rear within a contained space. In this scenario, aisle width of 1200 mm is required to allow Easy Access. Therefore, for our designs, we propose an aisle width of 1200 mm to enhance accessibility and cooling efficiency		
27.	100	23. Hot / Cold Aisle Containment System	This requirement specifies metallic filler panels outside and inside racks, however containments are fully populated with racks with no space for filler panels. For rack mount filler panels please specify U size for floor panels and number of Us for which panels are required? Please allow third-party / local filler as it gives flexibility to FBR	OEMs may have limitation in their aisle width design . These may be required to support adjustments at site.	Responded
	164	120. Hot / Cold Aisle Containment System			
28.	100	23. Hot / Cold Aisle Containment System	We have mechanical sliding option in case of emergency, Please allow	Allowed if it complies emergency release standards	Responded
	164	120. Hot / Cold Aisle Containment System			
29.	100	23. Hot / Cold Aisle Containment System	This specification is an extract from EcoAisle Thermal Containment System Bid Specifications of APC Schneider Electric, kindly allow as per OEM supplied ceiling for equal participation as this is Brand Locking and against PPRA Rules. Document Attached for Reference. The specified standards—UL 484, EN 55022, EN 55024, EN 61000-3-2, EN 61000-3-3, EN 60950-1,	These are generic standards as reference. All products are acceptable complying safety and security standards.	Responded
	165	120. Hot / Cold Aisle Containment System			

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			<p>CFR 47 FCC Part 15:2011, ANSI C63.4, ICES-003, and AS/NZS CISPR 22 primarily address overall safety, stability, and electromagnetic compatibility . While these standards may not directly relate to the ceiling itself and specific material composition of the ceiling system.</p> <p>Our cold aisle containment ceiling system primarily consists of glass material, which inherently does not emit electromagnetic interference or pose other safety risks. So please consider removing this requirement since fire safety requirement is sufficient and is already mentioned</p>		
30.	101	23. Hot / Cold Aisle Containment System	We offer clear and transparent ceiling panels which allows, optional racks lights are also available. Please allow third-party lights inside containment in case required lux levels are not met	Allowed	Responded
	165	120. Hot / Cold Aisle Containment System			
31.	103	25. Uninterruptible Power System	In above clause you have asked for independent how swappable modular static bypass , here you have asked for embedded static bypass , please clarify the requirement	Statement defines these all are independent modules. It clarifies that independent hot swappable, modular static bypass is required	Responded
	167	132. Uninterruptible Power System			
32.	103	25. Uninterruptible Power System	Please clarify your requirement of external service-bypass , external service by-pass is not part of UPS and is managed through External I/O Panel . Allow for external 3rd party I/O Panel with by-pass	Multiple OEMs provide service bypass panel with UPS as option. If any OEM has challenge then 3rd party panel is allowed	Responded
	167	132. Uninterruptible Power System			

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
33.	106	25. Uninterruptible Power System	Factory test reports of complete units are provided, please specify which component level test reports you require, if at all?	Modular UPS is required so test report will be required to of complete unit and its modules	Responded
	170	132. Uninterruptible Power System			
34.	106	25. Uninterruptible Power System	Our UPS offers provides classification level of VFI-SS-111 under IEC EN 62040-3 , please allow	IEC 60721-4-2 Level 2M2 is different standard as compared to IEC EN62040-3. however EN62040-3 is also required in RFP, so allowed	Responded
	170	132. Uninterruptible Power System			
35.	105	25. Uninterruptible Power System	The UN38.3 standard is a subsection of the UN Manual of Tests and Criteria, our product already complies with the globally recognized UL 1973 standards and tested according to it please allow	Allowed	Responded
	168	132. Uninterruptible Power System			
36.	105	25. Uninterruptible Power System	Allow Fan controlled heat dissipation	Allowed	Responded
	169	132. Uninterruptible Power System			
37.	105	25. Uninterruptible Power System	Please allow as per site because FBR layout show clearance between battery bank and Wall	Allowed as per site requirement	Responded
	169	132. Uninterruptible Power System			
38.	105	25. Uninterruptible Power System	Power Room will already have sufficient fire protection measures, please remove this clause	Fire protection at cabinet or module level is required. Please share your OEM fire protection strategy for Li-ion Batteries	Responded
	169	132. Uninterruptible Power System			
39.	106	27. Modular Power Distribution for UPS Output	Temperature of each terminal of circuit breaker is not a standard requirement in branch circuit monitoring, please remove this	Temperature of each circuit breaker can be quoted as optional, not mandatory	Responded
	170	137. Modular Power Distribution for UPS Output			
40.	108	28. UPS for NOC, SOC, System Room, Network Room and other IT load	The UPS of Vertiv provides, Internal Bypass and External Maintenance Bypass which allows the supply to the Load using a	External bypass DB is allowed	Responded
	110				

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
			Bypass Source within the Unit. External Bypass will be provided through the DB.		
	172	143. UPS for NOC, SOC, System Room, Network Room and other IT load	The UPS of Vertiv provides, Internal Bypass and External Maintenance Bypass which allows the supply to the Load using a Bypass Source within the Unit. External Bypass to the UPS will be provided through the DB.	External bypass DB is allowed	Responded
	175				
41.	110	28. UPS for NOC, SOC, System Room, Network Room and other IT load	Usually unit level test reports are provided, please specify component whose test reports are required	Unit level test reports will be accepted	Responded
	170	143. UPS for NOC, SOC, System Room, Network Room and other IT load	Usually unit level test reports are provided, please specify component whose test reports are required	Unit level test reports will be accepted	Responded
42.	112	31. Cooling Units for Data Center	Please revise specifications to allow Wet-Film Humidifier as steam generating type/ Infrared is limited to higher capacity Units which only favours a single brand in this particular case. Secondly Wet-Film provides more energy-savings compared to the Infrared or Electrode Type Humidifier.	This is general requirement which majority brand complies, Wet-film is allowed	Responded
	177	148. Cooling Units for Data Center			
	116	39. Cooling Unit for Power Rooms			
	181	168. Cooling Unit for Power Rooms			
43.	113	31. Cooling Units for Data Center	This is not part of the OEM Solution and only specific to a certain OEM, kindly allow for participation, as this is not a essential part for operation of the Unit by the OEM.	Flooded receiver is required for system protection at low temperature. Please share OEM confirmation if it is not available.	Responded
	177	148. Cooling Units for Data Center			
44.	113	31. Cooling Units for Data Center	This is vendor specific please allow 3 KW capacity which is	3KW is allowed	Responded

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	177	148. Cooling Units for Data Center	sufficient and as per standard design		
45.	111	31. Cooling Units for Data Center	Every manufacturer have its own cabinet construction, this is too specific requirement, consider removing this. Moreover, units are fixed and meant not to be moved frequently so casters are not recommended	Allowed and Please share OEM construction gauge and standards. Casters and levelling feet are required	Responded
	175	148. Cooling Units for Data Center			
46.	113	31. Cooling Units for Data Center	Please explain this requirement	This is basic working feature of heaters	Responded
	177	148. Cooling Units for Data Center			
47.	114	39. Cooling Unit for Power Rooms	Please allow third-party / external mechanism for dual input	Allowed with auto transfer mechanism	Responded
	178	168. Cooling Unit for Power Rooms			
48.	114	39. Cooling Unit for Power Rooms	Please allow third-party / external mechanism for dual input	Allowed with auto transfer mechanism	Responded
	178	168. Cooling Unit for Power Rooms			
49.	114	39. Cooling Unit for Power Rooms	Our unit is equipped with one set of nylon air filters, located within the cabinet, and accessible from the front side of the unit, please allow	Minimum EU4/Eq filtering is required. Accessibility is allowed	Responded
	178	168. Cooling Unit for Power Rooms			
50.	114	39. Cooling Unit for Power Rooms	Our whole system is designed and manufactured according to world-class quality standards. The manufacturer has an ISO 9001 certified and the unit has a CE certification, please allow	Allowed	Responded
	179	168. Cooling Unit for Power Rooms			
51.	115	39. Cooling Unit for Power Rooms	Please explain this point and clarify this requirement?	This setting feature is required, and should be password protected	Responded

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
	180	168. Cooling Unit for Power Rooms			
52.	116	39. Cooling Unit for Power Rooms	This is specific , our compressor is equipped with a suction gas-cooled motor, vibration isolators, internal thermal overloads, manual reset high-pressure switch, a low pressure & high-pressure transducer, and crankcase heater, please allow	Allowed	Responded
	180	168. Cooling Unit for Power Rooms			
53.	116	39. Cooling Unit for Power Rooms	Coil position upstream from FAN is designed for downflow units, your requirement is up flow, please remove this clause	Please quote as per power room requirement	Responded
	180	168. Cooling Unit for Power Rooms			
54.	116	39. Cooling Unit for Power Rooms	This is relatively small PAC unit, here we offer single stage kindly allow	if your OEM has limitation then it is allowed	
	181	168. Cooling Unit for Power Rooms			
55.	116	39. Cooling Unit for Power Rooms	This is floor standing perimeter cooling unit here condensate pump etc are not required, allow for gravity drain	System shall have pump available, different capacity range can be accepted	Responded
	181	168. Cooling Unit for Power Rooms			
56.	117	55. DCIM & Environmental Monitoring System	Kindly specify which is correct?	500-600 devices	Responded
	119				
57.	118		Kindly Specify which BMS needs to be integrated on Modbus TCP?	This feature has to be available, in case if required in future	Responded
58.	118		Kindly specify which device will be needed to be monitored on Public LAN?	DCIM	Responded
59.	118		Kindly Specify which other Management Systems needs to be integrated?	Options: NMS, BMS, facility management system etc.	Responded

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60.	120		this section is from the Specifications from a particular Brand (word for word), kindly allow OEM supplied Security Measures in respective devices for participation as this is Brand locking which is against PPRA Rules	Allowed, please share OEM supplied security measures	Responded
61.	182	184. DCIM & Environmental Monitoring System	Kindly specify which is correct?	500-600	Responded
	184				
62.	183		Kindly Specify which BMS needs to be integrated on Modbus TCP?	This feature has to be available, in case if required in future	Responded
63.	182		Kindly specify which device will be needed to be monitored on Public LAN?	DCIM	Responded
64.	182		Kindly Specify which other Management Systems needs to be integrated?	Options: NMS, BMS, facility management system etc.	Responded
65.	184		DCIM Security: this section is from the Specifications from a particular Brand, kindly allow OEM supplied Security Measures is respective devices for participation as this is Brand locking which is against PPRA Rules	Allowed, please share OEM supplied security measures	Responded
66.	117	55. DCIM & Environmental Monitoring System	Complete Specifications of DCIM is from Struxure Ware Data Center Expert Bid Specifications. Document attached for reference	RFP specifications are detailed and generic which complies multiple OEM. In compliance sheet further flexibility is added. These are generic requirement and you can quote as per OEM best available feature set.	Responded
	181	184. DCIM & Environmental Monitoring System	Please allow flexibility for other Brands such as Vertiv/HUAWEI/Other to propose the respective DCIM Solutions		

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			with their available feature set and specifications as part of the complete DC Infra offering.		
67.			As briefed that Access control for Racks not required so need in written confirmation.	Access control not required but racks must be capable to adjust access control for future requirement.	Responded
68.	4	Addendum 2, item 8	Generator Standards mentioned in Addendum 2 page 4 item 8 are Mandatory or Compliance?	Compliance	Responded
69.			2M US\$ SINGLE PO as today briefed IT will not be consider but still confusion so need to get clarification in written	Datacenter infrastructure with passive material only will be considered to calculate two million rupees project cost. Cost should not include compute or network infrastructure i.e. server, storage, router, switches etc.	Responded
70.			As local panel assemblers are not able to wet any Type test validation and even otherwise, there is no local single authority exist in Pakistan that can issue certificate of compliance or conformance for relevant section for passing full range of Type test verification Conformance / certificate for LOW VOLTAGE switchgear/ distribution BOARDS Systems So: -	Manufacturing authorizing certificate (MAC) should be from OEM or its regional distributor.	Responded
71.	136	Section VII – Schedule of Requirements	Do we need to offer Only Type Tested certified switchboards (All Components and Cubical be Imported assembled by OEM) means “component and Cubical” as one Certified Type Tested	All Components (switchgear, busbars, cubical) shall be imported from original OEM and can be assembled locally by authorized channel partners.	Responded

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
			Imported (CBU) units that are assembled by renowned International OEM only??		
72.	201	Section VII – Schedule of Requirements	<p>Do the imported CBU Type tested Switchboards will be accepted with Original Factory's Manufacturing Authorization Letter where certificate of Conformance must be submitted for IEC Standard: 61439-1 & 2 core compliance under ASEFA/ASTA/KEMA/DEKRA as global type test passing authorities?</p> <p>Do the same OEM should must have local install base in Pakistan or not?</p>	<p>All Components (switchgear, busbars, cubical) shall be imported from original OEM and can be assembled locally by authorized channel partners.</p> <p>OEM must have local presence</p>	Responded
73.	227	Section VII – Schedule of Requirements	Do we need to offer all critical Switchboards must be minimum FORM-III @IP42 Factor with floor standing enclosure having only pre-installed Surge protection, IDTML/ELR and over current protection devices on main input from day one with PAD Lock Circuit Breakers only.	Minimum form 3B, floor standing enclosure, surge protection IDMT, and over current protection devices can be installed during panels assembly. The circuit breaker may not be necessarily provided with pad lock facility however if it is provided, it will be accepted.	Responded
74.			Do all the switchgears from OEM come with (ELCB/ Over Current/ IDTML/ DTL/ ELR protection on upstream to downstream side for all the critical Components protection?	<p>Earth leakage protection is not required</p> <p>However surge protection and over current protection from upstream to downstream is required</p>	Responded
75.	230	Section VII – Schedule of Requirements	Do all non-critical Switchboards must be minimum FORM-II @ IP 42 Factor and can be wall mounted	Minimum form 2A, enclosure can be provided wall mounted as per site condition, IDMT,	Responded

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
			enclosures having Main Circuit breaker PAD Lock protected with IDTML/ ELR and over current protection devices on main input from day one.	and over current protection devices can be installed during panels assembly. The circuit breaker may not be necessarily provided with pad lock facility however if it is provided, it will be accepted.	
76.			Do all the switchboards must with OEM DPM with physical health check status and full line parameters to be displayed and must be live integratable with DCIM?	Yes	Responded
77.			Will Vendor cover consumables like Air Filters, Oil Filter , Fuel Filter Lube Oil of Gen Set during warranty period?	Yes	Responded
78.			Will Vendor cover Over Hauling of Gen set if required during Warranty period?	Yes (if required)	Responded
79.			Will Vendor cover Fire Suppression Gas normally Gas never covered ?	Yes (in case of accidental release)	Responded
80.		POD Drawings	The drawings show 600 racks only in the POD, please confirm distribution of 800 width racks for PODs	Already explained in pre-bid, these are reference layout, and vendor will share their own layouts as per requirement. 800mm width rack will be place in POD-1	Responded
81.		POD Drawings	The drawings show 1200 mm Depth racks in the POD1 , please confirm the requirement of 600 x 1200 and 800 x 1200 mm racks	These are reference layouts. Racks depth have range 1070-1200. Please place your POD as per RFP defined range and submit layout	Responded

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82.			Please confirm whether Rack based Modular Power distribution for UPS output in Lahore site is to be installed in rack or in power rooms ?	Rack based Modular Power distribution for UPS output will be placed in containment for Both Islamabad and Lahore	Responded
83.			In-row Cooling units shown in drawings etc are 300 mm wide , please confirm can we use 600 mm units, please also confirm 9 cooling units (N+1) distribution in POD 1 and Digital Initiative POD	300mm is required as per available space	Responded
84.			Please share details of 3rd part racks such as exadata racks which are to installed in lahore and Islamabad	As per today exadata rack size is 600x1200mm as shown in layout, POD should have flexibility for adjustment	Responded
85.	229	POD 6.1 Inrow DX Cooling Units, without humidifier & dehumidifier at least 24KW or above sensible Cooling at ambient / outside 46°C No. 4 6.2 Inrow DX Cooling Units with humidifier & dehumidifier at least 24KW or above sensible Cooling at ambient / outside 46°C No. 2	The drawing shows 7 in-row cooling units in POD 1 while BOQ has total 6 in-row units, please confirm the requirement	DOT Lahore BOQ and Drawings both shows 6 cooling units as required. Please specify which drawing you are referring	Responded

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
86.			IT DB1 & IT DB2 with 400A FP MCCB RC-25KA is shown , please confirm this DBs are required of manufarers racks type Power Distribution Modules are required	Yes	Responded
87.			Please also confirm the location of IT DB 1 & 2 as shown in SLD , will they be placed in power rooms or containment	Containment	Responded
88.			Is IT DB 1 & IT DB 2 used as alternate name for UPS output distribution?	Yes	Responded
89.			As per our understanding, addendum 2 quantities and specification requirements over ride other requirements, please confirm	If there is any deviation from RFP, then addendum 2 will prevail	Responded
90.	4	116 Humidification	Our unit of 300 mm comes with wet film humidifier , Please allow wet-film humidifier for participation	wet-film humidifier can be used	Responded
91.		Outdoor flooded receiver package for ambient temperatures down to -40C/-40F.	Our OEM doesn't offer flooded receiver package , net sensible capacity , CFM , and ambient temperature are sufficient to guage unit performance , please remove these granular design level requirements	Flooded receiver is optional, if your OEM confirms that unit will work safely at outdoor low temperature. Then it will be accepted	Responded
92.	11	EIA/TIA compliant Server Rack 600x1070mm/ 600x1100mm, 42U (Floor Mounted) for	Vertical cable manager is installed in 800 mm racks 600 mm racks have no space for this , please remove requirement of vertical cable managers for 600 mm racks	Major OEMs including vertiv offers vertical cable mangers in 600mm racks and has to be complied	Responded

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		Server Room, complete with vertical and horizontal cable managers. Perforated doors, removable side panels, split rear door, EIA mounting rails, grounding/bondi ng kit, levelling feet, black color, IP 20, CE/UL Compliant 16+10 racks for server room, 4 racks for MMRs, 2 Racks for staging room			
93.	12	i) PDUs. Should support per outlet monitoring (32A Rack PDUs.) ii) PDUs. Should support per outlet monitoring (16A Rack PDUs.) iii) PDUs. Should support per outlet monitoring (You have asked for out level monitoring in rack PDU compliance please allow unit level monitoring	Outlet level monitoring is required	Responded

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
		32A Rack PDU's 3 Phase)			
94.			Lahore BOQ doesn't have any line item of 3 Phase PDU for EXA Data while its drawing shows 2 Exa Data racks , Islamabad has 4 PDU's for Exa data but drawing doesn't indicate these racks , Compliance says 4 are required each for lahore and Islamabad Please confirm Exa data requirement for lahore and Islamabad. Please also share Exadata Racks specifications which is required for POD / Containment design	Already explained in Prebid1, please follow compliance requirement	Responded
95.	12	VIII The Ceiling System complies to UL484, EN 55022, EN 55024, EN 61000-3-2:2006, EN 61000-3-3:1995, EN 60950-1, CFR 47 FCC Part 15, ANSI C63.4, ICES-003, AS/NZS CISPR 22. At least 5 are mandatory	You have made this requirement mandatory , which will lead to disqualification , please remove this mandatory requirement	These are generic standards as reference. All products are acceptable complying safety and security standards.	Responded
96.		LED lighting, Lumens per foot at hot aisle > 180 M	You have made LED lighting, of 180 Lumens per foot at hot aisle a mandatory requirement , this is specific to hot aisle containment ,	500 lumens is required in updated addendum, Hot aisle containment is a	Responded

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
			we offer cold aisle containment , please remove this clause	mandatory design requirement	
97.	14	XIV Batteries: Redundant and Concurrently Maintainable Battery Strings M	In compliance you have said Batteries: Redundant and Concurrently Maintainable Battery Strings, please elaborate this requirement, please explain the requirement of redundant and concurrently maintainable strings , how many redundant string is required and describe its operating principal for redundant battery strings	Redundant and concurrent maintainable is generic clause. OEM proposed redundant strings will be acceptable	Responded
98.	14	XV Battery management System: Module level monitoring and management, integrated with DCIM	Monitoring is done through BMS LCD and Controller, please allow	Module/string level monitoring should be integrated with DCIM	Responded
99.	14	XIV External Maintenance bypass system M	You have made it mandatory, please allow it be managed at UPS I/O Panel.	Suggestion is acceptable	Responded
100.		XIV External Maintenance bypass system M	Please allow third-party / external mechanism for single or dual input (which ever applicable as per response on dual bus input query of UPS output distribution)	Suggestion is acceptable	Responded
101.	14	VI Architecture and construct : Dual bus architecture, IP 20	In UPS output distribution you have asked for Dual Bus Construct while SLD Shows single phase input , please confirm the topology and connectivity ?	Already explained in Prebid-2, dual bus is required, if OEM has challenge then it may be acceptable with OEM confirmation	Responded

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
102.	14	VI Architecture and construct : Dual bus architecture, IP 20	Please confirm you require two inputs to Output distributions from separate UPSs?	Yes, but OEM has limitation then single input to output distribution is allowed	Responded
103.	15	RS232 Monitoring: Remote PDU monitoring shall be possible via RS232 serial port connection.	This is low level physical interface / connection requirement , what matters is protocol such as Modbus , please allow modbus	Already it is C, so allowed	Responded
104.			You havent specified width of UPS output Distribution for Lahore, please confirm it will be installed inside POD or Power rooms ?	Already confirmed	Responded
105.			No minimum capability POLE requirements are specified for Lahore Distribution , please confirm its requirement?	Follow Power SLD	Responded
106.			In UPS output distribution you have asked The PDU and associated equipment shall operate in conjunction with a primary power supply to provide quality uninterrupted power for mission critical, electronic equipment load, please explain this requirement	Primary power supply means UPS	Responded
107.	15	VRLA/Dry Sealed Maintenance Free, Redundant and Concurrently Maintainable battery strings,	In facility UPS compliance you has asked for Batteries : VRLA/Dry Sealed Maintenance Free, Redundant and Concurrently Maintainable battery strings, please explain the requirement of redundant and concurrently maintainable strings , how many	Redundant and concurrent maintainable is generic clause. OEM proposed redundant strings will be accepted	Responded

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
			redundant string is required and describe its operating principal for redundant battery strings		
108.	16	XXIV charging and battery testing on user defined time.	Please explain the battery testing requirement	RFP defined Battery autonomy	Responded
109.	16	XXIV charging and battery testing on user defined time.	Charging is done as per equalization of float, please remove this clause	If OEM has different charging method, it may be acceptable with OEM confirmation	Responded
110.	16	a) DX Type Inrow Unit (without heater and humidifier) – 24- 29KW Net Sensible Cooling Capacity	You have mentioned the in compliance that Cooling Unit Net Sensible Capacities are after deduction of all tolerances and at minimum of 45 deg. C ambient condition, please elaborate and specify the tolerances referred?	We require minimum 24KW net sensible cooling capacity at 45 deg C	Responded
111.	16	a) DX Type Inrow Unit (without heater and humidifier) – 24- 29KW Net Sensible Cooling Capacity	For cooling units filters you have asked to comply with requirement that The standard filters shall be 30% efficient per ASHRAE Standard 52.1 or 52.2, Our unit follows European standard EN 779 pertains to particulate air filters for general ventilation and is equipped with G 4 Filter , please allow	Allowed	Responded
112.	16	a) DX Type Inrow Unit (without heater and humidifier) – 24- 29KW Net Sensible	Like you have specified Ambient temperatures , please also specify supply air temperature , return air temperature and maximum Delta T limit , this is essential for CFD failing to which CFD may not be indicative of your required scenario	Supply temperature 22-23 deg C Return temperature 31-32 degC Delta T = 9 deg Humidity as per Ashrae defined range	Responded

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
		Cooling Capacity			
113.	16	a) DX Type Inrow Unit (without heater and humidifier) – 24- 29KW Net Sensible Cooling Capacity		Already replied.	Responded
114.	17	a) DX Type Inrow Unit (without heater and humidifier) – 24- 29KW Net Sensible Cooling Capacity		Already replied.	Responded
115.	17	a) DX Type Inrow Unit (without heater and humidifier) – 24- 29KW Net Sensible Cooling Capacity	Each OEM has different R & D and technology to maintain efficiency and accuracy , you have made it mandatory clause , please remove this requirement	Can be accepted with OEM Confirmation	Responded
116.	17	a) DX Type Inrow Unit (without heater and humidifier) – 24- 29KW Net Sensible	You have made loose shipping of leak detection sensing cable as mandatory requirement , unit have water leak detection , please remove this loose shipping mandatory requirement	Leak detection cable is required	Responded

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
		Cooling Capacity			
117.	17	a) DX Type Inrow Unit (without heater and humidifier) – 24- 29KW Net Sensible Cooling Capacity	Our units does not have SPD, please relax this requirement for participation	SPD is required at cooling units distribution system	Responded
118.	17	b) DX Type Inrow Unit (with heater and humidifier) – 24- 29KW Net Sensible Cooling Capacity No. 4 M	You have mentioned the in compliance that Cooling Unit Net Sensible Capacities are after deduction of all tolerances and at minimum of 45 deg. C ambient condition, please elaborate and specify the tolerances referred?	We require minimum 24KW net sensible cooling capacity at 45 deg C	Responded
119.	17	b) DX Type Inrow Unit (with heater and humidifier) – 24- 29KW Net Sensible Cooling Capacity No. 4 M	For cooling units filters you have asked to comply with requirement that The standard filters shall be 30% efficient per ASHRAE Standard 52.1 or 52.2, Our unit follows European standard EN 779 pertains to particulate air filters for general ventilation and is equipped with G 4 Filter , please allow	Allowed	Responded
120.	17	b) DX Type Inrow Unit (with heater and humidifier) – 24- 29KW Net Sensible Cooling	For required 300 mm units with required net sensible cooling capacity our unit comes with wet film humidifier only, please allow for participation	Allowed	Responded

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
		Capacity No. 4 M			
121.	17	b) DX Type Inrow Unit (with heater and humidifier) – 24- 29KW Net Sensible Cooling Capacity No. 4 M	Like you have specified Ambient temperatures, it is emphasized that also specify supply air temperature, return air temperature and maximum Delta T limit , this is essential for CFD failing to which CFD may not be indicative of your required scenario	Already replied	Responded
122.	17	b) DX Type Inrow Unit (with heater and humidifier) – 24- 29KW Net Sensible Cooling Capacity No. 4 M		Already replied	Responded
123.		b) DX Type Inrow Unit (with heater and humidifier) – 24- 29KW Net Sensible Cooling Capacity No. 4 M	For cooling units filters you have asked to comply with requirement that The standard filters shall be 30% efficient per ASHRAE Standard 52.1 or 52.2, Our unit follows European standard EN 779 pertains to particulate air filters for general ventilation and is equipped with G 4 Filter , please allow	Allowed, Same question repeated several times	Responded
124.	18	b) DX Type Inrow Unit (with heater and humidifier) – 24- 29KW Net Sensible Cooling	Each OEM has different R & D and technology to maintain efficiency and accuracy , you have made it mandatory clause , our units its is done with PACC controller so please remove this requirement	Please share OEM available option, will be accepted (Same question repeated several times)	Responded

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
		Capacity No. 4 M			
125.	18	c) DX Type CRAC Unit (with heater and humidifier) – 20- 25kW Net Sensible Cooling Capacity as per required need - For 2x Power Rooms	Pressures of suction and discharge line can be monitored through HP transducer and LP transducer. Please allow and remove this specific mandatory requirement	Allowed	Responded
126.	19	c) DX Type CRAC Unit (with heater and humidifier) – 20- 25kW Net Sensible Cooling Capacity as per required need - For 2x Power Rooms	Our unit comes with 2.5 EER please allow	Allowed	Responded
127.	19	c) DX Type CRAC Unit (with heater and humidifier) – 20- 25kW Net Sensible Cooling Capacity as per required need - For 2x Power Rooms	NEMA standard is National Electrical Manufacturers Association (NEMA) used in North America, you have asked for local hot dip galvanized trays please remove this requirement	Hot dip galvanized is acceptable	Responded

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
128.		c) DX Type CRAC Unit (with heater and humidifier) – 20- 25kW Net Sensible Cooling Capacity as per required need - For 2x Power Rooms	You have made schedule 40 drain pipe mandatory requirement in some instances Industrial Hose pipe is used as recommended by manufacturer to reduce any potential leakage chance which is decided as per site , so please remove this mandatory requirement	Can be quoted as per OEM recommendation	Responded
129.	20	iv) Water Leak Detection System (covering all potential areas of water leakages in Server room, Power Room, MMR Rooms & supporting automatic control of isolation valves/water supply incase of leak detection) Rope Cable /spot detector whichever is required at site	Water leak detection systems in EMS just detect and don't control valves and water supply, you have made this a mandatory requirement , please remove this clause	Can be quoted control system independently	Responded
130.	20-21	Licensing should be covered for all supplied and monitored	You have made future licensing requirement mandatory , which is very open ended please specify number of device licenses required	100 node capacity will be required in future	Responded

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
		equipment of project including the future deployments as per full design capacity of the project. DCIM Server should have dual Power Supply to avoid single point of failure M			
131.	21	f) Installation, testing, integration and commissioning of above items. Includes integration of DCIM with NOC, SOC Room Video Walls and Data Center Incharge LED Screens	You have asked for integration of DCIM with NOC, SOC Room Video Walls and Data Center Incharge LED Screens, by this integration we understand its display or accessibility over local network , please confirm ?	Yes	Responded
132.		85. Structured Cabling	Kindly Share the Topology, Network Diagrams/Schematics and Details for the assessment of the Structured Cabling Required. Or share the BOQ.	Network diagram already shared, follow as per rooms seating plan	Responded
133.	40	10 STRUCTURED CABLING SYSTEM FOR DATA	Kindly reply to the following questions for working on structured cabling BoQ, 1. there are mainly 3 types of racks in Data centres.	1. TOR for server room racks 2. 2x fiber ports for each path x 2 3. OM4 4. 8 fiber ports	Responded

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
		CENTER & OPERATIONS AREA	<p>I. Network Racks or EOR (End of Row) Racks</p> <p>II. Equipment/Server Racks (within Data centre/POD)</p> <p>III. MMR Racks</p> <p>2. share the Fiber ports requirements between each Network Rack & each Equipment Racks</p> <p>3. share the Fiber type between Network Racks & Equipment Racks (OM4 pre-terminated/OS2 pre-terminated)</p> <p>4. share the Fiber Ports requirements between each network Rack and each MMR Rack</p> <p>5. share the Fiber type requirements between network Rack and MMR Rack (OM4 pre-terminated/OS2 pre-terminated)</p> <p>6. share the Copper Cat7 Ports requirements between each Network Rack & each Equipment Racks (12 or 24 Port)</p> <p>7. share the Copper Cat7 Ports requirements between each Network Rack & each MMR Rack (12 or 24 Port)</p> <p>8. share the Fibre Patch Cord requirement /port in percentages like if we have 1500 Fibre Ports on both sides then we can ask for percentage of port count like for 10% Port count it would be 150 Patch Cords.</p> <p>9. share the UTP Cat6A Patch</p>	<p>5. OM4</p> <p>6. Not required</p> <p>7. NA</p> <p>8. Fiber patch cords = 200 (different lengths)</p> <p>9. 1500 UTP Cat6A patch cords for Islamabad & 900 UTP Cat6A patch cords for Lahore</p>	

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Sr. No	Page/ Section	Clause No/Description	Description of the Bidder Query	FBR Response	Query Status
			<p>Cord requirement /port in percentages like if we have 1500 UTP Ports on both sides then we can ask for percentage of port count like for 10% Port count it would be 150 Patch Cords.</p> <p>10. Kindly also note that raised queries applies for both Islamabad & Lahore sites.</p> <p>Note: fibre Port means 2 fibre Cores i.e. one for TX and one for RX, known brands does not have Cat7 Patch cords due to standards limitation so they offer cat6A Patch cords instead of Cat7.</p>		
134.	72	10 Structured Cabling System For Data Center & Operations Area		Note: Each server rack should have 2x 48 port shutter type Cat-7/Cat6A, RJ 45 UTP Patch Panel fully loaded with tool less jacks and cable manage	Responded
135.		Addendum-II, Sr.# 2 Specific Experience	As per the above requirement, if any bidder have completed one project of 10 Rack and 2 million USD equivalent in PKR for similar in nature but also included some portion of IT Fabric (H/W, N/W etc) under the same Title of Data Center Infrastructure project/site contract. Will it be considered as many data center construction projects equal or above 2 million USD included all main data center component as turnkey solution from single vendor?	The projects that have relevant scope or similar in nature will be considered for evaluation.	Responded