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Republic of the Philippines
University of the Philippines Mindanao
Mintal, Tugbok District, Davao City

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BID BULLETIN NO. 02-2021

UPGRADING OF IT NETWORK (PHASE II)
PBM 2021-010

This Bid Bulletin is issued for revisions in the Bidding Documents, namely:

1) Checklist of Requirements under *Technical Documents* (i) Conformity with the Technical Specifications (signed by authorized signatory), **Annex I** (see attached format), Section VI. Schedule of Requirements (signed by authorized signatory), which may include production/delivery schedule, manpower requirements, and/or after-sales/parts, if applicable.

2) Term of Reference

TERM OF REFERENCE

Paragraph/ Section	Particulars	Amendment/Remarks
	V. TECHNICAL SPECIFICATIONS **VI. DELIVERY AND IMPLEMENTATION** **VII. OTHER REQUIREMENTS** **IX. INSPECTION, TESTING, ACCEPTANCE AND PAYMENT**	**VII. TECHNICAL SPECIFICATIONS** **VIII. DELIVERY AND IMPLEMENTATION** **IX. OTHER REQUIREMENTS** **X. INSPECTION, TESTING, ACCEPTANCE AND PAYMENT**

IV. BIDDER'S QUALIFICATIONS

Paragraph/ Section	Particulars	Amendment/Remarks
	1. The Contractor must have at least One Licensed Electrical Engineer and One Licensed Electronic Communication Engineer who are currently employed in the contractor's company trained and certified in the design and installation of cabling systems.	2. The Contractor must have at least one Licensed Electrical Engineer, at least one Licensed Electronic Communication Engineer and at least One Certified Data Center Professional (CDCP) during the project and warranty duration that are trained and certified in the design and installation of cabling systems.

VI. DELIVERABLES

Paragraph/ Section	Particulars	Amendment/Remarks
No.1	SFP/SFP+/SFP28 Transceivers (support 1GbE/10GbE/25GbE) – 168 units	1Gbe SFP Transceivers – 24 units for Single mode fiber 25Gbe SFP28 Transceivers – 46 units for Single mode fiber
No.1	6m Fiber Patch cord compatible with the SFP/SFP+/SFP28 Transceivers – 168 units	6m SC-LC Fiber Patch cord compatible with 1 Gbe SFP Transceivers – 24 units for Single mode fiber 6m SC-LC Fiber Patch cord compatible with 25Gbe SFP28 Transceivers – 46 units for Single mode fiber 6m LC-LC Fiber Patch cord compatible with 1 Gbe SFP Transceivers –12 units for Single mode fiber 6m LC-LC Fiber Patch cord compatible with 25Gbe SFP28 Transceivers – 12 units for Single mode fiber

No.1	QSFP+/QSFP28 Transceivers (support 100GbE) - 8 units	QSFP+/QSFP28 Transceivers (support 100GbE)- 2 units for Single mode fiber
No.1	6m Fiber Patch cord compatible with the 100G QSFP+/QSFP28 Transceivers - 8 units	6m SC-LC Fiber Patch cord compatible with the 100G QSFP+/QSFP28 Transceivers - 2 units
No.4	Monitored & Switched per Outlet PDUs (48 outlets)- 10 units	Outlet PDUs (48 outlets)- 2 units
No.5	Monitored & Switched per Outlet PDUs (24 outlets)- 28 unit	Outlet PDUs (24 outlets)- 14 unit

VII. TECHNICAL SPECIFICATIONS

Paragraph/ Section	Particulars	Amendment/Remarks
NETWORK EQUIPMENT **1. Fiber Core Switch (at least 2 units)**	**1. Fiber Core Switch (at least 2 units)**	**1. Fiber Core Switch (2 units)**
NETWORK EQUIPMENT **1. Fiber Core Switch (at least 2 units)**	f. Includes at least 168 units of compatible SFP/SFP+/SFP28 Transceivers (support 1GbE/ 10GbE /25GbE) must be compatible with the new EDGE Switch POE specified in this Term of Reference for the 2 units of fiber core switch. Also must be compatible with the firewall (PALO ALTO PA 820), HP A5500 Switch and existing switches	f. Includes at least 24 units of compatible SFP Transceivers (support 1GbE/10GbE/25GbE), at least 46 units of compatible SFP28 Transceivers (support 1GbE/10GbE/25GbE). They must be compatible with the new EDGE Switch POE specified in this Term of Reference for the 2 units of fiber core switch. Also must be compatible with the existing equipment. Note: The current University's equipment: firewall - Palo Alto PA 820, Palo Alto PA 500, Yeastar S300, Aruba Controller (7205,)HP A5500 Switch and existing switches and servers
NETWORK EQUIPMENT **1. Fiber Core Switch (at least 2 units)**	h. Includes compatible 8 units 100G QSFP+/QSFP28 Transceivers and must be compatible with HP A5500 Switch and the new EDGE Switches POE specified in this Term of Reference for the 2 units of fiber core switch	h. Includes compatible 2 units 100G QSFP+/QSFP28 Transceivers for Single Mode Fiber and must be compatible with HP A5500 Switch and the new EDGE Switches POE specified in this Term of Reference for the 2 units of fiber core switch
NETWORK EQUIPMENT **1. Fiber Core Switch (at least 2 units)**	i. At least 168 units 6m Fiber Patch cord compatible with the SFP/SFP+/SFP28 transceivers, EDGE Switches POE and core switches for the 2 units of fiber core switch	i. At least 24 units of 6m SC-LC Fiber Patch cord compatible with the 1Gbe SFP Transceivers, and at least 46 units of 6m SC-LC Fiber Patch cord compatible with the 25Gbe SFP28 Transceivers. At least 12 units of LC-LC 6m Fiber Patch cord compatible with the 1Gbe SFP Transceivers, and at least 12 units of 6m LC-LC Fiber Patch cord compatible with the 25Gbe SFP28 Transceivers.The Fiber patch should be compatible with the EDGE Switches POE and core switches for the 2 units of fiber core switch
NETWORK EQUIPMENT **1. Fiber Core Switch (at least 2 units)**	j. At least 8 units 6m Fiber Patch cord compatible with the 100G QSFP+/QSFP28 Transceivers, EDGE Switches POE and core switches for the 2 units of fiber core switch	j. At least 2 units 6m SC-LC Fiber Patch cord compatible with the 100G QSFP+/QSFP28 Transceivers, EDGE Switches POE and core switches for the 2 units of fiber core switch

NETWORK EQUIPMENT **1. Fiber Core Switch (2 units)**	p. The bidder must have at least: i. one (1) Palo Alto Networks Certified Network Security Engineer to handle the implementation, support and training and ii. one (1) Palo Alto Networks Certified Network Security Consultant for the design and security posture assessment. iii. one (1) Aruba Certified Switching Professional and iv. one (1) Certified Mobility Professional for the design, implementation and training v. one (1) Certified Mobility Professional for the design , implementation and training	p. The bidder must have at least the following personnel during the project and warranty duration: i. one (1) Palo Alto Networks Certified Network Security Engineer to handle the implementation, support and training and ii. one (1) Palo Alto Networks Certified Network Security Consultant for the design and security posture assessment. iii. one (1) Aruba Certified Switching Professional and iv. one (1) Certified Mobility Professional for the design, implementation and training
4. 42RU Network Cabinet (at least 2 units)	At least 2 units of PDUs for each rack are included. Additional 6 units of PDU for the 3 existing Racks in the Admin Building Data Center. For the total of 10 units of PDUs. Installation and configuration of PDUs to the different power sources are included.	At least 2 units of PDUs for each rack are included. Installation and configuration of PDUs to the different power sources are included.
4. 42RU Network Cabinet (at least 2 units)	Must be Monitored & Switched per Outlet PDUs. The primary input plugs into an On-Line UPS system. The secondary input plugs into a wall outlet. If the UPS system is taken offline for maintenance, repair or replacement, the PDU keeps the load powered by automatically switching from the primary input to the secondary input because of its ATS functionality. When the UPS system is restored, the PDU will switch back to the primary input. A switched PDU can locally monitor load level and avoid potential overloads with a built-in digital current meter, as well as remotely control individual outlets for the rebooting of locked equipment to avoid costly service calls, custom power-on/power-off sequences and load-shedding of non-essential loads during blackouts to extend battery backup runtime for critical equipment. Unused PDU outlets can be electronically locked off to prevent the connection of unauthorized hardware.	*remove from the Term of Reference
5. 24RU Network Cabinet (at least 14 units)	at least 2 Units PDU for each rack. For the total of 28 units of PDUs for at least 14 units of 24RU Network Cabinet. Installation and configuration of PDUs to the different power sources are included	at least 1 Units PDU for each 24RU rack. For the total of 14 units of PDUs for at least 14 units of 24RU Network Cabinet. Installation and configuration of PDUs to the different power sources are included
5. 24RU Network Cabinet (at least 14 units)	Must be Monitored & Switched per Outlet PDUs. The primary input plugs into an On-Line UPS system. The secondary input plugs into a wall outlet. If the UPS system is taken offline for maintenance, repair or replacement, the PDU keeps the load powered by automatically switching from the primary input to the secondary input because of its ATS functionality. When the UPS system is restored, the PDU will switch back to the primary input. A switched PDU can locally monitor load level and avoid potential overloads with a built-in digital current meter, as well as remotely control individual outlets for the rebooting of locked equipment to avoid costly service calls, custom power-on/power-off sequences and load-shedding of non-essential loads during blackouts to extend battery backup runtime for critical equipment. Unused PDU outlets can be electronically locked off to prevent the connection of unauthorized hardware.	*remove from the Term of Reference

8. Wireless Access Point	j. WAPs must support Power-over-Ethernet standard 802.3af	j. WAPs must support Power-over-Ethernet standard beyond 802.3af
8. Wireless Access Point	k. WAPs must supports 802.11e and Quality of Service (QoS)	k. WAPs may supports 802.11e and Quality of Service (QoS)
9. Structured Cable System (at least 966 nodes)	9. Structured Cable System (at least 966 nodes)	9. Structured Cable System (at least 500 nodes)
9. Structured Cable System (at least 966 nodes) GENERAL SPECIFICATIONS	d. All conduits for the backbone cables shall be an Electrical Metallic Tubing (EMT) pipe with connector coupling and all cable trays/conduit support or hangers shall be permanently anchored on the ceiling.	*remove from the Term of Reference
9. Structured Cable System (at least 966 nodes) GENERAL SPECIFICATIONS	The Locations of at least 966 nodes will be finalized once the project is awarded to the winning bidder since new buildings may be finished during the duration of the bidding. The end-user has the right to re-allocate the nodes depending on the availability of the new building.	The Locations of at least 500 nodes will be finalized once the project is awarded to the winning bidder since new buildings may be finished during the duration of the bidding. The end-user has the right to re-allocate the nodes depending on the availability of the new building.
9. Structured Cable System (at least 966 nodes) ELECTRICAL WORKS	a. Electrical works shall comprise the supply and installation of power outlet (duplex type) per workstation.	a. Electrical works shall comprise the supply and installation of power outlets and electrical provisions for the cabinets if no existing electrical provisions.
9. Structured Cable System (at least 966 nodes) **PASSIVE COMPONENT** **1. Category 6a Cables**	a. Category 6A/Class EA cable shall be constructed of 23 AWG copper conductors with FEP Plenum (CMP) insulation. The copper conductors shall be twisted in pairs and separated by a cross-divider. All four pairs shall be surrounded by MaTriX tape and a flame retardant jacket. The advanced MaTriX tape shall suppress the effect of alien crosstalk allowing 10Gb/s transmission, while minimizing cable diameter. The innovative cable design shall provide installation flexibility as cables can be routed in tight bundles through pathways and spaces	a. Category 6A/Class EA cable shall be constructed of 23 AWG copper conductors with FEP Plenum (CMP) insulation. The copper conductors shall be twisted in pairs and separated by a cross-divider. All four pairs shall be surrounded by MaTriX tape (or its equivalent or better) and a flame retardant jacket. The advanced MaTriX tape shall suppress the effect of alien crosstalk allowing 10Gb/s transmission, while minimizing cable diameter. The innovative cable design shall provide installation flexibility as cables can be routed in tight bundles through pathways and spaces
9. Structured Cable System (at least 966 nodes) **PASSIVE COMPONENT** **1. Category 6a Cables**	b. Horizontal cabling shall be 23 AWG, 100-Ohm, 4-pair UTP; UL/NEC CMR rated, round design, round solid filler, non-bonded pairs, in white PVC jacket.	b. Horizontal cabling shall be 23 AWG, 100-Ohm, 4-pair UTP; UL/NEC CMP rated, round design, round solid filler, non-bonded pairs, in white PVC jacket.
9. Structured Cable System (at least 966 nodes) **PASSIVE COMPONENT**	**4. Faceplates** Faceplates shall be **Stainless Steel Faceplate**..	**4. Faceplates** Faceplates shall be **PVC Faceplate**.
9. Structured Cable System (at least 966 nodes) **PASSIVE COMPONENT** 5. Category 6a Patch Cords	c. Work area at least patch cords (966 units) shall be at least 10 meters while equipment patch cords at least (966 units) shall be 3 meters in length.	c. Work area at least patch cords (500 units) shall be at least 10 meters while equipment patch cords at least (500 units) shall be 3 meters in length.

9. Structured Cable System (at least 966 nodes) **PASSIVE COMPONENT**	6. Cable Organizer The Cable Organizer should have the minimum or better specifications at listed below a. Horizontal cable management hardware must be 1 RU.	6.Cable Organizer The Cable Organizer should have the minimum or better specifications at listed below a. Vertical cable management hardware must be compatible and the same brand with the cabinet in the Term of Reference.
9. Structured Cable System (at least 966 nodes) **PASSIVE COMPONENT Distribution of Nodes**	CHSS BUILDING 1ST FLOOR -72 CHSS BUILDING 2ND FLOOR -104 CHSS BUILDING 3RD FLOOR - 8 CSM BUILDING 1ST FLOOR - 272 CSM BUILDING 2ND FLOOR - 242 Aruba Access Points - 90 CARIM / OR, Staff Housing and other new Buildings Structured Cabling- 178	CHSS BUILDING 1ST FLOOR -82 CHSS BUILDING 2ND FLOOR -90 CHSS BUILDING 3RD FLOOR - 8 CSM BUILDING 1ST FLOOR - 90 CSM BUILDING 2ND FLOOR - 90 Aruba Access Points - 90 CARIM / OR, Staff Housing and other new Buildings Structured Cabling- 50
VII. OTHER REQUIREMENTS A. MAINTENANCE, SUPPORT AND WARRANTY	6. Provide at least two (2) on-call and on-site support personnel for three years after the acceptance of the project.	6. Provide on-call and on-site (if requested by the end user) support personnel for three years after the acceptance of the project.
Layout	Fiber Optic Connections from Existing Admin Data Center to Existing Buildings(Figure) Fiber Optic Connections from Proposed New Data Center to New/Proposed Structures(Figure)	*remove from the Term of Reference to avoid confusion since there is no structure cabling for the Fiber Optic Cabling It is replace with Spine-Leaf Architecture Sample 1(Figure) and Spine-Leaf Architecture Sample 2(Figure)

ADDENDUM to the Term of Reference

1. Setup and Configuration of new local and public DNS (opensource) for the entire network is included in the scope of work. The DNS should be configured with the firewall (PALO ALTO) and the new Fiber core switches and POE Switches. The servers or hardware equipment for the DNS shall be provided by the end user.
2. Renewal, updating and upgrading of the existing Aruba Controller (7205) firmware, software, licenses and OS to support the new 90 units of WIFI 6 access points and existing 90 units of access points is included in the scope of work. Setup and configuration of a third party wifi captive portal server(opensource) for the integration and configuration to the existing Aruba Controller (7205).The servers or hardware equipment for the third party wifi captive portal server shall be provided by the end user.
3. Setup and configuration of the Multi-WAN load balancer with the Firewall(PA820 and PA500) is included in the scope of work.
4. Setup and configuration of the Firewall(PA820 and PA500) for firewall redundancy and failover in the network is included in the scope of work.

For information and guidance of all concerned.

PROF. VLADIMER B. KOBAYASHI
Chair, Bids and Awards Committee for Goods