



### Bid Bulletin No. 1 12 October 2021

#### PUBLIC BIDDING NO. 21-131-10

## Upgrading of Local Area Network (LAN) – Various IT Equipment for the Department of Agrarian Reform (DAR) – Central Office

Issued pursuant to Sec. 22.5. of the IRR of RA 9184 to clarify and/or amend certain provisions in the Bidding Document issued for this project, considering the issues raised and clarifications made by prospective bidders during the Pre-Bid Conference held on 06 October 2021, and likewise respond to bidders' written queries received within the prescribed period for filing.

### A. AMENDMENTS

ITEM NO.				REFERENCES		REMARKS
1	Sectio	n I. In	vitation to			
	Page	8; and				
	0	,				
	Sectio	n III F	Rid Data Sł	neet		
		ם ווגביים ביות 1 בסווב	93			
		203C I 77				
	rage.	24				
	Lat	ltana			Approved	
	LOT	Item	Quantity	Item / Description	Budget for	
	NO.	NO.			theContract	
				Core Switch 40-Port		
		1	<del>3 unit/s</del>	10Gig switch with		To amond the <b>Quantity</b> of
			<u>z unit/s</u>	accessories, 3 years		them No. 1 from 2 with for
				Core Switch 16-nort		item No. 1 from 3 unit/s
				10Gig switch with		to <b>2 unit/s</b> .
		2	4 unit/s	accessories, 3 years		
				license and support		
				LAN Switch 48-port		
	1		15	10Gig 12xmGig,		
	-	3	unit/s	36x1G,4x10G PoE+ with	21,266,263.85	
				accessories, 3 years		
				Declawith accessories		
		А	4 unit/s	3 years license and		
		-	4 unit/3	support		
				WIFI 6 Indoor AP with		
		5	50	accessories, 3 years		
			unit/s	license and support		
		6	1 unit/c	Civil Works and		
		0	I unit/S	Implementation		

2	Sectio	on VI. Se	chedule of	Requirements		
-	Page	35		nequi entente		
	Lot No.	ltem No.	Qty.	Item/Description	Delivery Period	
		1	<del>3 unit/s</del> 2 unit/s	Core Switch 40-Port 10Gig switch with accessories, 3 years	Within	
		2	4 unit/s	Core Switch 16-port 10Gig switch with accessories, 3 years license and support	Sixty (60) Calendar Days from the issuance of	To amend the
	1	3	15 unit/s	LAN Switch 48-port 10Gig 12xmGig, 36x1G,4x10G PoE+ with accessories, 3 years license and support	Notice to Proceed. <u>Within</u> <u>OneHundred</u> Twenty (120)	of Item No. 1 from 3 unit/s to 2 unit/s.
		4	4 unit/s	PoE+ with accessories, 3 years license and support	Calendar Days from the issuance of	
		5	50unit/s	WIFI 6 Indoor AP with accessories, 3 years license and support	<u>Notice to</u> <u>Proceed.</u>	
		6	1 unit/s	Civil Works and Implementation		
3	Sectio	on VII. T	echnical S	pecifications		
	1.2 Ac	dition	al Items			To amend Item No. 1.2.2 of
	Page 4	40				Section VII. Technical Specifications.
	ITEM AGENCY SPECIFICATIONS				Please refer to <b>"Annendix</b>	
	1	<b>1.2</b> A	Additional It	ems 2 units		1"for the amended
	1	1.	2.1 Console	Cable 6ft with USB Tyr	be A and mini-	Technical Specifications
	1	В				form
	1	<del>1.2.2</del>	- Console Cal	ole 6ft with USB Type A	and mini B	IOIIII
	1	<u>1.2.2</u>	<u>. 8 x 10GE N</u>	<u>etwork Module</u>		

# **B. CLARIFICATIONS**

NO.	DETAILS	REFERENCES	CLARIFICATIONS
1	The Vice Chairperson sought clarification from the End-User whether the prospective bidders are required to present all the following contracts similar to the project or just any of them:	Section III. Bid Data Sheet ITB Clause 5.3. Page 22	The End-User responded that the requirement is at least one (1) of the specified contracts similar to the project only
	a. Any contract for the Supply, Delivery, and Installation of		project only.

	IT Equipment/Products for Local Area Network		
	b. Any contract for the Supply,		
	Delivery, and Installation of		
	Core Switches		
	c. Any contract for the Supply,		
	Delivery, and Installation of		
	IT Equipment's Accessories		
NEO-	TECH ASIA DISTRIBUTION		
2	The prospective bidder requests for	Section 32.1 of the 2016	The prospective
	an ocular inspection of the project	IRR of RA 9184	bidders who wish to
	site.		conduct an ocular
		"Members of the BAC,	inspection are required
		including its staff and	to send a request to
		personnel, as well as its	the BAC Secretariat
		Secretariat and TWG, are	through <u>dcinco@ps-</u>
		prohibited from making	philgeps.gov.phto be
		or accepting any	able to arrange a
		communication with any	schedule with the end-
		bidder regarding the	user.
		evaluation of their bids	
		until the issuance of the	However, please note
		Notice of Award.	that the prospective
		However, the BAC,	bidders may only
		through its Secretariat,	conduct an ocular
		may ask in writing the	inspection prior to the
		bidder for a clarification	Bid Opening on 20
		of its bid. All responses	October 2021 at 10:00
		to requests for	AIM as Section 32.1 of
		clarification shall be in	the 2016 IRR of RA
		writing."	9184 prohibits the BAC
			wempers, Secretariat
			and IWG to
			communicate with any
			blader from the Bld
			Opening until the
			issuance of the Notice
			of Award.

All portions of the Bidding Documents affected by these amendments shall be made to conform to the same.

Amendments/inclusions/clarifications made herein shall be considered an integral part of the Bidding Documents.

The changes made in the Philippine Bidding Documents (6<sup>th</sup> Edition, July 2020) are deemed integrated in the terms and conditions for this project



**ENGR. JAIME M. NAVARRETE JR.** Chairperson, Bids and Awards Committee X

For the purpose of this Bid Bulletin and for better understanding of its contents, the following rules shall apply: (1) strikethrough denotes deletion; (b) underline denotes inclusion or new item/requirement; and "xxx" denotes separation of phrase/s being amended from the rest of the main text.

LOT NO. 1	:	Upgrading of Local Area Network (LAN) – Various IT Equipment for the Department of Agrarian Reform (DAR) Central Office
QUANTITY	:	1 Lot
APPROVED BUDGET PER UNIT	:	Php 21,226,263.85
APPROVED BUDGET FOR THE CONTRACT	:	Php 21,226,263.85

ITEM NO.		AGENCY SPECIFICATIONS	BIDDER'S STATEMENT OF COMPLIANCE*
	1. <u>Core S</u> and su	witch 40-Port 10Gig switch with accessories, 3 years license pport	Brand and Model:
	1.1	2 Unit Multilayer Core Switch	
	1.1.1	Must be of the same vendor as the Access and Distribution switches, and Access Points to ensure compatibility and easy troubleshooting	
	1.1.2	Proposed hardware vendor must be placed in the leader quadrant of year 2020 Gartner report for Wired and Wireless	
	1.1.3	1 RU Form Factor 40-port 10Gig switch with Advanced License	
	1.1.4	Must deliver up-to 960 Gbps Full Duplex of switching capacity and 720 Mpps of forwarding rate	
1	1.1.5	Must have Stacking system virtualization technology that increases operational efficiency and boosts nonstop communications and scaled system bandwidth	
	1.1.6	Must have Dual redundant, modular power supplies and three modular fans providing redundancy	
	1.1.7	<ul> <li>Switch Capabilities</li> <li>Unified Access Data Plane (UADP) Application-Specific Integrated Circuit (ASIC) ready for next-generation technologies with its programmable pipeline, microengine capabilities, and template-based, configurable allocation of Layer 2 and Layer 3 forwarding, Access Control Lists (ACLs), and Quality- of-Service (QoS) entries</li> <li>Intel® 2.4-GHz x86 CPU with up to 120 GB of USB 3.0 or up to 960 GB of SATA SSD storage for container- based application hosting</li> <li>Platinum-rated AC power supplies</li> <li>Up to 512,000 Flow entries in hardware</li> <li>Up to 36 MB of unified buffer per ASIC</li> <li>Up to 64,000 routing entries (IPv4/IPv6) for high-end campus core and aggregation deployments</li> <li>IPv6 support in hardware, providing wire-rate</li> </ul>	

<ul> <li>IEEE 802.1ba AV Bridging (AVB) built in to provide a</li> </ul>	
i i i i i i i i i i i i i i i i i i i	
better $\Delta V$ experience through improved time	
sumphronization and OoS	
Synchronization and Q05	
• Precision Time Protocol (PTP; IEEE 1588v2) provides	
accurate clock synchronization with sub-inicrosecond	
accuracy, making it suitable for distribution and	
synchronization of time and frequency over the network	
• Dual-stack support for IPv4/IPv6 and dynamic hardware	
forwarding table allocations, for ease of IPv4-to-IPv6	
migration	
Support for both static and dynamic NAT and Port	
Address Translation (PAT)	
<ul> <li>Scalable routing (IPv4, IPv6, and multicast) tables and</li> </ul>	
Layer 2 tables	
A modern operating system for the enterprise with	
support for model-driven programmability, on-box	
Python scripting, streaming telemetry, container-based	
application hosting, and patching for critical bug fixes.	
The OS also has built-in defenses to protect against	
runtime attacks	
Stacking technology, a network system virtualization	
technology that increases operational efficiency and	
boosts nonstop communications and scaled system	
bandwidth	
1.1.8 SD-Access Features:	
<ul> <li>Policy-based automation from edge to cloud</li> </ul>	
<ul> <li>Segmentation and micro-segmentation made easy, with</li> </ul>	
predictable performance and scalability	
Automation and network assurance	
Faster launch of new business services and significantly	
improved issue resolution time	
• Plug and Play (PnP) enabled: A simple, secure, unified,	
and integrated offering to ease new branch or campus	
device rollouts or updates to an existing network	
1.1.9 Advanced security:	
Encrypted Traffic Analytics (ETA): You benefit from	
the power of machine learning to identify and take	
actions toward threats or anomalies in your network,	
including malware detection in encrypted traffic and	
distributed anomaly detection. Additionally, ETA is able	
to detect vulnerable implementations in encrypted traffic	
Support for AES-256 with the powerful MACsec 256-bit	
encryption algorithm available on all models	
Trustworthy systems: Secure Unique Device	
Identification (SUDI) support for Plug and Play,	
enabling tamper-proof device identity capability, which	
secures zero-touch provisioning by allowing your device	
to show a certificate to the server to be able to get onto	
your network	
1.1.10 IP Routing Protocols:	
IP unicast routing protocols (including static; Routing	
Information Protocol version 1 [RIPv1], version 2	
[RIPv2], and next generation [RIPng]; and Open Shortest	
Path First [OSPF] routed access) are supported for small	
network routing applications with the Network Essentials	
stack	
Advanced IP unicast routing protocols (such as OSPF,	
Enhanced Interior Gateway Routing Protocol [EIGRP],	

	<ul> <li>Border Gateway Protocol Version 4 [BGPv4], and Intermediate System-to-Intermediate System Version 4 [IS-ISv4]) are supported for load balancing and for constructing scalable LANs. IPv6 routing (using OSPFv3 and EIGRPv3) is supported in hardware for maximum performance</li> <li>Protocol-Independent Multicast (PIM) for IP multicast routing is supported, including PIM Sparse Mode (PIM SM), bidirectional PIM, and Source-Specific Multicast (SSM)</li> <li>IPv6 addressing is supported on interfaces with appropriate show commands for monitoring and troubleshooting</li> </ul>	
1.1.11	Must have 10/100/1000 RJ-45 console and management port	
1.1.12	<ul> <li>Must have the following industry standards:</li> <li>IEEE 802.1s</li> <li>IEEE 802.1w</li> <li>IEEE 802.1x</li> <li>IEEE 802.3ad</li> <li>IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports</li> <li>IEEE 802.1D Spanning Tree Protocol</li> <li>IEEE 802.1Q VLAN</li> <li>IEEE 802.3 10BASE-T specification</li> <li>IEEE 802.3u 100BASE-T specification</li> <li>IEEE 802.3u 100BASE-T specification</li> <li>IEEE 802.3z 1000BASE-X specification</li> <li>IEEE 802.3z 1000BASE-X specification</li> <li>RMON I and II standards</li> <li>SNMPv1, SNMPv2c, and SNMPv3</li> </ul>	
1.1.13	Must support Operating Temperature of 32° to 104°F (0° to 40°C) Operation up to 6000 feet at 55°C and 13,000 feet at 45°C	
1.1.14	Must have a minimum of Mean-Time-Between-Failures (MTBF) of 277,310 hrs	
1.1.15	Must Support Relative Humidity of Ambient (noncondensing) operating: 5% to 90%	
1.1.16	Must support up to 64,000 Media Access Control (MAC) Entries	
1.1.17	Must support up to 64,000 IPv4 routes	
1.1.18	Must support up to 32,000 IPv4 Multicast routes	
1.1.19	Must support up to 32,000 IPv6 routes	
1.1.20	Must support up to 16,000 IPv6 Multicast routes	
1.1.21	Must support up to 512,000 Flow Entries	
1.1.22	Must support up to 18,000 QoS ACL Entries	

	1.1.23	Must support up to 18,000 Security ACL Entries	
	1.1.24	Must support up to 16 GB DRAM	
	1.1.25	Must support up to 16 GB Flash	
	1.1.26	Must support up to 4094 Total VLAN IDs	
	1.1.27	Must support up to 13,000 STP Virtual Ports for PVST	
	1.1.28	Must support up to 13,000 STP Virtual Ports for MST	
	1.1.29	Must support up to 1000 Total Switched Virtual Interfaces (SVIs)	
	1.1.30	Must support up to 9198 bytes of Jumbo Frames	
	1.2 A	dditional Items 2 units	
	1.2.1	Console Cable 6ft with USB Type A and mini-B	
	1.2.2	8 x 10GE Network Module	
	1.3 V	Varranty and Support	
	1.3.1	3YR Warranty and Solution Support 24x7x4	
	2. <u>Core Sw</u> and sup	ritch 16-port 10Gig switch with accessories, 3 years license port	Brand and Model:
	2.1. 4	Units Multilayer Core Switch	
	2.1.1	Must be of the same vendor as the Core and Access switches,	
		troubleshooting	
	2.1.2	Proposed hardware vendor must be placed in the leader quadrant of year 2020 Gartner report for Wired and Wireless	
	2.1.3	1 RU Form Factor 16-port 10Gig switch with Advanced	
	2.1.4	License Must deliver up-to 480 Gbps Full Duplex of switching	
	215	capacity and 360 Mpps of forwarding rate	
	2.1.5	Must have Stacking system virtualization technology that increases operational efficiency and boosts nonstop	
		communications and scaled system bandwidth	
2	2.1.6	Must have Dual redundant, modular power supplies and three modular fans providing redundancy	
	2.1.7	Switch Capabilities	
		• Unified Access Data Plane (UADP) Application-Specific	
		• Unified Access Data Plane (UADP) Application-Specific Integrated Circuit (ASIC) ready for next-generation technologies with its programmable pipeline.	
		• Unified Access Data Plane (UADP) Application-Specific Integrated Circuit (ASIC) ready for next-generation technologies with its programmable pipeline, microengine capabilities, and template-based,	
		• Unified Access Data Plane (UADP) Application-Specific Integrated Circuit (ASIC) ready for next-generation technologies with its programmable pipeline, microengine capabilities, and template-based, configurable allocation of Layer 2 and Layer 3 forwarding. Access Control Lists (ACLs) and Quality-	
		• Unified Access Data Plane (UADP) Application-Specific Integrated Circuit (ASIC) ready for next-generation technologies with its programmable pipeline, microengine capabilities, and template-based, configurable allocation of Layer 2 and Layer 3 forwarding, Access Control Lists (ACLs), and Quality- of-Service (QoS) entries	
		<ul> <li>Unified Access Data Plane (UADP) Application-Specific Integrated Circuit (ASIC) ready for next-generation technologies with its programmable pipeline, microengine capabilities, and template-based, configurable allocation of Layer 2 and Layer 3 forwarding, Access Control Lists (ACLs), and Quality- of-Service (QoS) entries</li> <li>Intel® 2.4-GHz x86 CPU with up to 120 GB of USB 3.0</li> </ul>	
		<ul> <li>Unified Access Data Plane (UADP) Application-Specific Integrated Circuit (ASIC) ready for next-generation technologies with its programmable pipeline, microengine capabilities, and template-based, configurable allocation of Layer 2 and Layer 3 forwarding, Access Control Lists (ACLs), and Quality- of-Service (QoS) entries</li> <li>Intel® 2.4-GHz x86 CPU with up to 120 GB of USB 3.0 or up to 960 GB of SATA SSD storage for container- based application hosting</li> </ul>	
		<ul> <li>Unified Access Data Plane (UADP) Application-Specific Integrated Circuit (ASIC) ready for next-generation technologies with its programmable pipeline, microengine capabilities, and template-based, configurable allocation of Layer 2 and Layer 3 forwarding, Access Control Lists (ACLs), and Quality- of-Service (QoS) entries</li> <li>Intel® 2.4-GHz x86 CPU with up to 120 GB of USB 3.0 or up to 960 GB of SATA SSD storage for container- based application hosting</li> <li>Platinum-rated AC power supplies</li> </ul>	
		<ul> <li>Unified Access Data Plane (UADP) Application-Specific Integrated Circuit (ASIC) ready for next-generation technologies with its programmable pipeline, microengine capabilities, and template-based, configurable allocation of Layer 2 and Layer 3 forwarding, Access Control Lists (ACLs), and Quality- of-Service (QoS) entries</li> <li>Intel® 2.4-GHz x86 CPU with up to 120 GB of USB 3.0 or up to 960 GB of SATA SSD storage for container- based application hosting</li> <li>Platinum-rated AC power supplies</li> <li>Up to 512,000 Flow entries in hardware</li> </ul>	
		<ul> <li>Unified Access Data Plane (UADP) Application-Specific Integrated Circuit (ASIC) ready for next-generation technologies with its programmable pipeline, microengine capabilities, and template-based, configurable allocation of Layer 2 and Layer 3 forwarding, Access Control Lists (ACLs), and Quality- of-Service (QoS) entries</li> <li>Intel® 2.4-GHz x86 CPU with up to 120 GB of USB 3.0 or up to 960 GB of SATA SSD storage for container- based application hosting</li> <li>Platinum-rated AC power supplies</li> <li>Up to 512,000 Flow entries in hardware</li> <li>Up to 36 MB of unified buffer per ASIC</li> <li>Up to 64 000 routing entries (IPv4/IPv6) for high and</li> </ul>	

	campus core and aggregation deployments	
	• If vo support in naturate, providing wire-rate forwarding for IPv6 networks	
	• IEEE 802 1ba AV Bridging (AVB) built in to provide a	
	better AV experience through improved time	
	synchronization and QoS	
	• Precision Time Protocol (PTP; IEEE 1588v2) provides	
	accurate clock synchronization with sub-microsecond	
	accuracy, making it suitable for distribution and	
	synchronization of time and frequency over the network	
	• Dual-stack support for IPv4/IPv6 and dynamic hardware	
	forwarding table allocations, for ease of IPv4-to-IPv6	
	migration	
	• Support for both static and dynamic NAT and Port	
	Address Translation (PAT)	
	• Scalable routing (IPv/ IPv6 and multicast) tables and	
	Laver 2 tables	
	• With modern operating system for the enterprise with	
	support for model-driven programmability, on-box	
	Python scripting, streaming telemetry, container-based	
	application hosting, and patching for critical bug fixes.	
	The OS also has built-in defenses to protect against	
	runtime attacks	
	• Stacking technology, a network system virtualization	
	boosts ponston communications and scaled system	
	bandwidth	
2.1.8	SD-Access Features:	
	<ul> <li>Policy-based automation from edge to cloud</li> </ul>	
	• Segmentation and micro-segmentation made easy, with	
	predictable performance and scalability	
	Automation and network assurance	
	• Faster launch of new business services and significantly	
	improved issue resolution time	
	• Plug and Play (PnP) enabled: A simple, secure, unified,	
	and integrated offering to ease new branch or campus	
210	Advanced security:	
2.1.7	<ul> <li>Encrypted Traffic Analytics (ETA): You benefit from</li> </ul>	
	the power of machine learning to identify and take	
	actions toward threats or anomalies in your network.	
	including malware detection in encrypted traffic and	
	distributed anomaly detection. Additionally, ETA is able	
	to detect vulnerable implementations in encrypted traffic	
	• Support for AES-256 with the powerful MACsec 256-bit	
	encryption algorithm available on all models	
	Irustworthy systems: Secure Unique Device  Identification (SUDI) support for Dive and Dive	
	enabling temper-proof device identity capability, which	
	secures zero-touch provisioning by allowing your device	
	to show a certificate to the server to be able to get onto	
	your network	
2.1.10	IP Routing Protocols:	
	IP unicast routing protocols (including static; Routing	
	Information Protocol version 1 [RIPv1], version 2	
	[RIPv2], and next generation [RIPng]; and Open Shortest	
	Path First [OSPF] routed access) are supported for	
	smallnetwork routing applications with the Network	

	<ul> <li>Essentials stack</li> <li>Advanced IP unicast routing protocols (such as OSPF, Enhanced Interior Gateway Routing Protocol [EIGRP], Border Gateway Protocol Version 4 [BGPv4], and Intermediate System-to-Intermediate System Version 4 [IS-ISv4]) are supported for load balancing and for constructing scalable LANs. IPv6 routing (using OSPFv3 and EIGRPv6) is supported in hardware for maximum performance</li> <li>Protocol-Independent Multicast (PIM) for IP multicast routing is supported, including PIM Sparse Mode (PIM SM), bidirectional PIM, and Source-Specific Multicast (SSM)</li> <li>IPv6 addressing is supported on interfaces with appropriate show commands for monitoring and troubleshooting</li> </ul>	
2.1.11	Must have 10/100/1000 RJ-45 console and management port	
2.1.12	<ul> <li>Must have the following industry standards:</li> <li>IEEE 802.1s</li> <li>IEEE 802.1w</li> <li>IEEE 802.1x</li> <li>IEEE 802.1x-Rev</li> <li>IEEE 802.3ad</li> <li>IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports</li> <li>IEEE 802.1D Spanning Tree Protocol</li> <li>IEEE 802.1p CoS prioritization</li> <li>IEEE 802.1Q VLAN</li> <li>IEEE 802.3 10BASE-T specification</li> <li>IEEE 802.3u 100BASE-T specification</li> <li>IEEE 802.3a 1000BASE-T specification</li> <li>IEEE 802.3z 1000BASE-X specification</li> <li>IEEE 802.3z 1000BASE-X specification</li> <li>RMON I and II standards</li> <li>SNMPv1, SNMPv2c, and SNMPv3</li> </ul>	
2.1.13	40°C) Operation up to 6000 feet at 55°C and 13,000 feet at 45°C	
2.1.14	Must have a minimum of Mean-Time-Between-Failures (MTBF) of 315,790 hrs	
2.1.15	Must Support Relative Humidity of Ambient (noncondensing) operating: 5% to 90%	
2.1.16	Must support up to 64,000 Media Access Control (MAC) Entries	
2.1.17	Must support up to 64,000 IPv4 routes	
2.1.18	Must support up to 32,000 IPv4 Multicast routes	
2.1.19	Must support up to 32,000 IPv6 routes	
2.1.20	Must support up to 16,000 IPv6 Multicast routes	
2.1.21	Must support up to 512,000 Flow Entries	
2.1.22	Must support up to 18,000 QoS ACL Entries	
2.1.23	Must support up to 18,000 Security ACL Entries	

	2.1.24	Must support up to 16 GB DRAM	
	2.1.25	Must support up to 16 GB Flash	
	2.1.26	Must support up to 4094 Total VLAN IDs	
	2.1.27	Must support up to 13,000 STP Virtual Ports for PVST	
	2.1.28	Must support up to 13,000 STP Virtual Ports for MST	
	2.1.29	Must support up to 1000 Total Switched Virtual Interfaces (SVIs)	
	2.1.30	Must support up to 9198 bytes of Jumbo Frames	
	2.2. A	dditional Items 4 units	
	2.2.1	Console Cable 6ft with USB Type A and mini-B	
	2.2.2	8 x 10GE Network Module	
	2.3. W	Varranty and Support	
	2.3.1	3YR Warranty and Support 8x5xNBD	
	3. <u>LAN Sw</u> accessor	ritch 48-port 10Gig 12xmGig, 36x1G,4x10G PoE+ with ies, 3 years license and support	Brand and Model:
	3.1. 1	5 Units Access Switches	
	3.1.1	Must be of the same vendor as the Core and Distribution switches, and Access Points to ensure compatibility and easy troubleshooting	
	3.1.2	Proposed hardware vendor must be placed in the leader	
	3.1.3	1 RU Form Factor 48 ports full POE+ (12 mGig ports up to	
	3.1.4	Must deliver up-to 392 Gbps Full Duplex of switching	
	3.1.5	capacity and 291.66 Mpps of forwarding rate Switch Capabilities	
		<ul> <li>Up to 48ports</li> <li>Elevible downlink options</li> </ul>	
3		<ul> <li>Operational efficiency with optional backplane stacking, supporting stacking bandwidth up to 80 Gbps</li> <li>UADP 2.0 Mini with integrated CPU offers customers</li> </ul>	
		optimized scale with better cost structure	
		<ul> <li>Eminanced security with AES-128 MACsec encryption, policy-based segmentation, and trustworthy systems</li> <li>Layer 3 capabilities, including OSPF, EIGRP, ISIS, RIP, and routed access</li> </ul>	
		<ul> <li>Advanced network monitoring using Full Flexible NetFlow</li> </ul>	
		<ul> <li>Software-Defined Access (SD-Access):         <ul> <li>Simplified operations and deployment with policy-based automation from edge to cloud managed</li> </ul> </li> </ul>	
		<ul> <li>Network assurance and improved resolution time</li> <li>Plug and Play (PnP) enabled: A simple, secure, unified, and integrated offering to ease new branch or campus dation rollouts or undates to an axisting network.</li> </ul>	

	<ul> <li>A Common Licensing based operating system for the enterprise product family with support for model-driven programmability and streaming telemetry</li> <li>ASIC with programmable pipeline and micro-engine capabilities, along with template-based, configurable allocation of Layer 2 and Layer 3 forwarding, Access Control Lists (ACLs), and Quality of Service (QoS) entries</li> </ul>
3.1.6	Resiliency and high availability
3.1.6	<ul> <li>Resiliency and high availability</li> <li>Automated device provisioning is the ability to automate the process of upgrading software images and installing configuration files on switches when they are being deployed in the network for the first time. This provides turnkey solutions such as Plug and Play and Preboot Execution Environment (PXE) that enable an effortless and automated deployment.</li> <li>API-driven configuration is available with modern network switches. It supports a wide range of automation features and provides robust open APIs over NETCONF and RESTCONF using YANG data models for external tools, both off the shelf and custom built, to automatically provision network resources.</li> <li>Granular visibility enables model-driven telemetry to stream data from a switch to a destination. The data to be streamed is identified through subscription to a data set in a YANG model. The subscribed data set is streamed to the destination at specified intervals. Additionally, he switch software enables the push model. It provides near-real-time monitoring of the network, leading to quick detection and rectification of failures. Seamless software upgrades and patching supports OS resilience. The switch supports cold patching with reboot, which provides fixes for critical bugs and security vulnerabilities between regular maintenance releases. This support lets you add patches without having to wait for the next maintenance release. Cold patching requires the switch to be rebooted after patching to allow the changes to take effect.</li> <li>High availability: The switches support high-availability for configure EtherChannel provides the ability to configure EtherChannel provides the ability to configure EtherChannel provides the ability to configure EtherChannel technology across different members of the stack for high resiliency.</li> <li>IEEE 802.1s Multiple Spanning Tree (PVRST+) allows rapid spanning tree (IEEE 802.1w) reconvergence in dependent of spanning tree (increating and distributed processi</li></ul>
	<ul> <li>configuration than MSTP. In both MSTP and PVRST+ modes, stacked units behave as a single spanning tree node.</li> <li>Switch-port auto-recovery ("err-disable" recovery) automatically attempts to reactivate a link that is disabled because of a network error.</li> </ul>

3.1.7	Smart operation	
	<ul> <li>WebUI is an embedded GUI-based device-management tool that provides the ability to provision the device, to simplify device deployment and manageability, and to enhance the user experience. It comes with the default image, so there is no need to enable anything or install any license on the device. You can use WebUI to build configurations, and to monitor and troubleshoot the device without having CLI expertise.</li> <li>The switches have an embedded RFID tag that facilitates easy asset and inventory management using commercial RFID readers.</li> <li>The switches support both front and back blue beacon LEDs for easy identification of the switch being accessed.</li> </ul>	
	<ul> <li>The switches provide optimum power saving with Energy Efficient Ethernet (EEE) on the RJ-45 ports and low-power operations for industry best-in-class power management and power consumption capabilities. The ports support reduced power modes so that ports not in use can move into a lower power utilization state. Other efficient switch operation features are as follows:         <ul> <li>Per-port power consumption command allows customers to specify a maximum power setting on an individual port.</li> </ul> </li> <li>The switches have hardware support to connect a Bluetooth dongle to your switch, enabling you to use this wireless interface as an IP management port interface. The port can be used for configuration and troubleshooting using WebUI or the Command-Line Interface (CLI), and to transfer images and configurations.</li> </ul>	
3.1.8	IP Routing Protocols	
5.1.0	<ul> <li>The Express Forwarding hardware routing architecture delivers extremely high-performance IP routing in the Series switches, based on:</li> <li>IP unicast routing protocols (including static, Routing Information Protocol Version 1 [RIPv1], RIPv2, RIPng, and Open Shortest Path First [OSPF], Routed Access) are supported for small network routing applications with the Network Essentials stack. Equal-cost routing facilitates Layer 3 load balancing and redundancy across the stack.</li> <li>Advanced IP unicast routing protocols (including Full [OSPF], Enhanced Interior Gateway Routing Protocol [EIGRP], and Intermediate System-to-Intermediate System Version 4 [IS-ISv4]) are supported for load balancing and for constructing scalable LANs. Ipv6 routing (using OSPFv3 and EIGRPv6) is supported in hardware for maximum performance.</li> <li>Protocol-Independent Multicast (PIM) for IP multicast routing is supported, including PIM sparse mode (PIM SM), and Source-Specific Multicast (SSM).</li> <li>Ipv6 addressing is supported on interfaces with appropriate show commands for monitoring and troubleshooting.</li> </ul>	

3.1.9	Must have Ethernet management port: RJ-45 connectors, 4- pair Cat 5 UTP cabling	
3.1.10	Must have the following industry standards:	
	<ul> <li>EEE 802.1s</li> <li>IEEE 802.1w</li> <li>IEEE 802.1x</li> <li>IEEE 802.1x-Rev</li> <li>IEEE 802.3ad</li> <li>IEEE 802.3af</li> <li>IEEE 802.3at</li> <li>IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports</li> <li>IEEE 802.1D Spanning Tree Protocol</li> <li>IEEE 802.1p CoS prioritization</li> <li>IEEE 802.3 10BASE-T specification</li> <li>IEEE 802.3u 100BASE-T specification</li> <li>IEEE 802.3z 1000BASE-T specification</li> <li>IEEE 802.3z 1000BASE-X specification</li> <li>RMON I and II standards</li> <li>SNMPy1 y2c and y3</li> </ul>	
3.1.11	SNMPv1, v2c, and v3 EMI and EMC compliance:	
	<ul> <li>FCC Part 15 (CFR 47) Class A</li> <li>ICES-003 Class A</li> <li>EMI and EMC compliance:</li> <li>FCC Part 15 (CFR 47) Class A</li> <li>ICES-003 Class A</li> <li>EN 55032 Class A</li> <li>CISPR 32 Class A</li> <li>AS/NZS 3548 Class A</li> <li>BSMI Class A</li> <li>VCCI Class A</li> <li>CISPR 35</li> <li>EN 55024, EN300 386*, EN 61000-3-2, EN 61000-3-3</li> <li>EN 61000-6-1</li> </ul>	
3.1.12	<ul> <li>Must support perating temperature* and altitudes:</li> <li>-5°C to +45°C, up to 5000 feet (1500m)</li> <li>-5°C to +40°C, up to 10,000 feet (3000m)</li> <li>* Minimum ambient temperature for cold start is 32°F</li> </ul>	
3.1.13	(0°C) Must have a minimum Mean-Time-Between-Failures (MTBF)	
3.1.14	Must Support Relative Humidity of Ambient (noncondensing) operating: 5% to 90% noncondensing	
3.1.15	Must Support up to 80 Gbps of Stacking bandwidth	
3.1.16	Must support up to 16,000 Media Access Control (MAC) Entries	
3.1.17	Must support up to 11,000 (8,000 direct routes and 3,000 indirect routes) Total number of IPv4 routes (ARP plus learned routes)	
3.1.18	Must support up to 3,000 IPv4 routes	
3.1.19	Must support up to 1,500 IPv6 routes	

	3.1.20	Must support up to 1,000 Multicast Entries	
	3.1.21	Must support up to 1000 QoS Scale Entries	
	3.1.22	Must support up to 1500 ACL Scale Entries	
	3.1.23	Must support up to 12 MB packet buffer	
	3.1.24	Must support up to 32,000 Flexible NetFlow (FNF) entries	
	3.1.25	Must support up to 2 GB DRAM	
	3.1.26	Must support up to 4 GB Flash	
	3.1.27	Must support up to 4096 Total VLAN IDs	
	3.1.28	Must support up to 512 Total Switched Virtual Interfaces (SVIs)	
	3.1.29	Must support up to 9198 bytes of Jumbo Frames	
	3.2. W	Varranty & Support	
	3.2.1	3YR Warranty and Support 8X5XNBD	
	4. <u>PoE+ wi</u>	th accessories, 3 years license and support	Brand and Model:
	4.1. 4	Units Access Switches	
	4.1.1	Must be of the same vendor as the Core and Distribution switches, and Access Points to ensure compatibility and easy	
	410	troubleshooting	
	4.1.2	quadrant of year 2020 Gartner report for Wired and Wireless	
	4.1.3	1 RU Form Factor 24 ports full PoE+ (8 mGig ports up to	
	414	10G, 16 ports up to 1G), 4x10G, PoE+, Advanced License Must deliver up to 272 Gbps Full Duplex of switching	
	7.1.7	capacity and 214.28 Mpps of forwarding rate	
	4.1.5	Switch Capabilities	
		• Up to 48ports	
4		• Flexible downlink options	
		• Operational efficiency with optional backplane stacking, supporting stacking bandwidth up to 80 Gbps	
		• UADP 2.0 Mini with integrated CPU offers customers	
		optimized scale with better cost structure	
		<ul> <li>Enhanced security with AES-128 MACsec encryption, policy-based segmentation, and trustworthy systems</li> </ul>	
		<ul> <li>Layer 3 capabilities, including OSPF, EIGRP, ISIS,</li> </ul>	
		RIP, and routed access	
		• Advanced network monitoring using next-generation in flow technology	
		• Software-Defined Access (SD-Access):	
		<ul> <li>Simplified operations and deployment with policy based automation from edge to cloud</li> </ul>	
		managed	
		<ul> <li>Network assurance and improved resolution time</li> </ul>	
		<ul> <li>Plug and Play (PnP) enabled: A simple. secure. unified.</li> </ul>	
		and integrated offering to ease new branch or campus	

<ul> <li>4.1.6 Resiliency and high availability</li> <li>Automated device provisioning is the ability to automate the process of upgrading software images and installing configuration files on switches when they are being deployed in the network for the first time. This provides turnkey solutions such as Plug and Play and Preboot Execution Environment (PXE) that enable an effortless and automated deployment.</li> <li>API-driven configuration is available with modern network switches. It supports a wide range of automation features and provides robust open APIs over NETCONF and RESTCONF using YANG data models for external tools, both off the shelf and custom built, to automatically provision network resources.</li> <li>Granular visibility enables model-driven telemetry to stream data from a switch to a destination. The data to be streamed is identified through subscription to a data set in a YANG model. The subscribed data set is streamed to the destination at specified intervals. Additionally, he visit software enables the push model. It provides near-real-time monitoring of the network, leading to quick detection and rectification of failures.</li> <li>Seamless software upgrades and patching supports OS resilience. The switch support scol quicking with reboot, which provides fixes support ligh- availability features, including the following:</li> <li>Cross-stack EtherChannel provides the ability to configure EtherChannel technology across different members of the stack for high resiliency.</li> <li>EEEE 802.1s Multiple Spanning Tree Protocol (MSTP) provides rapid spanning tree timers and also offers the benefit of Layer 2 load balancing and distributed processing.</li> <li>Per-VLAN Rapid Spanning Tree (PVRST+) allows rapid spanning tree (PVRST+) allows rapid spanning tree (PVRST+) allows rapid spanning tree (PVRST+) hallows rapid spanning tree (PVRST+) hallows rapid spanning tree (PVRST+) hallows rapid spanning tree (PVRST+) allows rapid spanning tree (PVRST+) hallows rapid span</li></ul>		<ul> <li>device rollouts or updates to an existing network</li> <li>A Common Licensing based operating system for the enterprise product family with support for model-driven programmability and streaming telemetry</li> <li>ASIC with programmable pipeline and micro-engine capabilities, along with template-based, configurable allocation of Layer 2 and Layer 3 forwarding, Access Control Lists (ACLs), and Quality of Service (QoS) entries</li> </ul>	
<ul> <li>Automated device provisioning is the ability to automate the process of upgrading software images and installing configuration files on switches when they are being deployed in the network for the first time. This provides turnkey solutions such as Plug and Play and Preboot Execution Environment (PXE) that enable an effortless and automated deployment.</li> <li>API-driven configuration is available with modern network switches. It supports a wide range of automation features and provides robust open APIs over NETCONF and RESTCONF using YANG data models for external tools, both off the shelf and custom built, to automatically provision network resources.</li> <li>Granular visibility enables model-driven telemetry to stream data from a switch to a destination. The data to be streamed is identified through subscription to a data set in a YANG model. The subscription to a data set in a YANG model. The subscription appendix destination of failures.</li> <li>Scamless offware upgrades and patching supports OS resilience. The switch support scold patching with reoloot, which provides fixes for critical bugs and security vulnerabilities between regular maintenance releases. This support less ou add patches without having to wait for the next maintenance release. Cold patching requires the switch to be reboored after patching to which the next maintenance release. Cold patching requires the switch to be reboored after patching to which the next maintenance release. Cold patching requires the switch to be reboored after patching to wait for the next maintenance release. Cold patching requires the switch to be reboored after patching to wait for the next maintenance release. Cold patching requires the switch to be reboored after patching to wait for the next maintenance release. Cold patching requires the switch to be reboored after patching to wait for the next maintenance release. Cold patching requires the switch to be reboored after patching to wait for the next maintenance release. This suppor</li></ul>	4.1.6	Resiliency and high availability	
stacked units behave as a single spanning use	4.1.6	<ul> <li>Resiliency and high availability</li> <li>Automated device provisioning is the ability to automate the process of upgrading software images and installing configuration files on switches when they are being deployed in the network for the first time. This provides turnkey solutions such as Plug and Play and Preboot Execution Environment (PXE) that enable an effortless and automated deployment.</li> <li>API-driven configuration is available with modern network switches. It supports a wide range of automation features and provides robust open APIs over NETCONF and RESTCONF using YANG data models for external tools, both off the shelf and custom built, to automatically provision network resources.</li> <li>Granular visibility enables model-driven telemetry to streamed is identified through subscription to a data set in a YANG model. The subscribed data set is streamed to the destination at specified intervals. Additionally, he switch software enables the push model. It provides near-real-time monitoring of the network, leading to quick detection and rectification of failures.</li> <li>Seamless software upgrades and patching supports OS resilience. The switch supports cold patching with reboot, which provides fixes for critical bugs and security vulnerabilities between regular maintenance releases. This support lets you add patches without having to wait for the next maintenance release. Cold patching requires the switch to be rebooted after patching to allow the changes to take effect.</li> <li>High availability: The switches support high-availability features, including the following:     <ul> <li>Cross-stack EtherChannel provides the ability to configure to a start of spanning tree convergence independent of spanning tree timers and also offers the benefit of Layer 2 load</li></ul></li></ul>	

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	monitoring and troubleshooting.	
4.1.8	Must have Ethernet management port: RJ-45 connectors, 4- pair Cat 5 UTP cabling	
4.1.9	<ul> <li>Must have the following industry standards:</li> <li>EEE 802.1s</li> <li>IEEE 802.1w</li> <li>IEEE 802.1x</li> <li>IEEE 802.1x-Rev</li> <li>IEEE 802.3ad</li> <li>IEEE 802.3af</li> <li>IEEE 802.3at</li> <li>IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports</li> <li>IEEE 802.1D Spanning Tree Protocol</li> <li>IEEE 802.1 p CoS prioritization</li> <li>IEEE 802.3 10BASE-T specification</li> <li>IEEE 802.3u 100BASE-TX specification</li> <li>IEEE 802.3z 1000BASE-T specification</li> <li>IEEE 802.3z 1000BASE-T specification</li> <li>IEEE 802.3z 1000BASE-X specification</li> <li>RMON I and II standards</li> <li>SNMPv1, v2c, and v3</li> </ul>	

4.1.10	EMI and EMC compliance:	
	<ul> <li>FCC Part 15 (CFR 47) Class A</li> <li>ICES-003 Class A</li> <li>EMI and EMC compliance:</li> <li>FCC Part 15 (CFR 47) Class A</li> <li>ICES-003 Class A</li> <li>EN 55032 Class A</li> <li>CISPR 32 Class A</li> <li>CISPR 32 Class A</li> <li>AS/NZS 3548 Class A</li> <li>BSMI Class A</li> <li>VCCI Class A</li> <li>CISPR 35</li> <li>EN 55024, EN300 386*, EN 61000-3-2, EN 61000-3-3</li> <li>EN 61000-6-1</li> </ul>	
4.1.11	Must support perating temperature* and altitudes:	
	<ul> <li>-5°C to +45°C, up to 5000 feet (1500m)</li> <li>-5°C to +40°C, up to 10,000 feet (3000m)</li> <li>* Minimum ambient temperature for cold start is 32°F (0°C)</li> </ul>	
4.1.12	Must have a minimun of Mean-Time-Between-Failures (MTBF) of 379,410 hrs	
4.1.13	Must Support Relative Humidity of Ambient (noncondensing) operating: 5% to 90% noncondensing	
4.1.14	Must Support up to 80 Gbps of Stacking bandwidth	
4.1.15	Must support up to 16,000 Media Access Control (MAC) Entries	
4.1.16	Must support up to 11,000 (8,000 direct routes and 3,000 indirect routes) Total number of IPv4 routes (ARP plus learned routes)	
4.1.17	Must support up to 3,000 IPv4 routes	
4.1.18	Must support up to 1,500 IPv6 routes	
4.1.19	Must support up to 1,000 Multicast Entries	
4.1.20	Must support up to 1000 QoS Scale Entries	
4.1.21	Must support up to 1500 ACL Scale Entries	
4.1.22	Must support up to 12 MB packet buffer	
4.1.23	Must support up to 32,000 Flexible NetFlow (FNF) entries	
4.1.24	Must support up to 2 GB DRAM	
4.1.25	Must support up to 4 GB Flash	
4.1.26	Must support up to 4096 Total VLAN IDs	
4.1.27	Must support up to 512 Total Switched Virtual Interfaces (SVIs)	
4.1.28	Must support up to 9198 bytes of Jumbo Frames	
4.2. W	arranty & Support	
4.2.1	3YR Warranty and Support 8X5XNBD	

5. <u>WI</u>	FI 6 Indoor AP with accessories, 3 years license and support	Brand and Model:
5.1	Must be of the same vendor as the Core and Distribution switches, and Access switches to ensure compatibility and easy troubleshooting	
5.2	Proposed hardware vendor must be placed in the leader quadrant of vear 2020 Gartner report for Wired and Wireless	
5.3	Must have a built in DNS security feature to block request from malicious and unwanted destinations before establishing connection	
5.4	Must be a cloud-based, subscription-based security which blocks proliferation of security threats including malware, phishing, cryptomining and Botnet command and control attacks/callbacks, as part of compliance to Republic Act 10175 or the "Cybercrime Prevention Act of 2012"	
5.5	Must be capable of captive portal functionality and redirection to specific site/s, network, or VPN network	
5.6	Must provide a cloud-based, subscription-based child protection system which can block content such as, but not limited to, pornography and proxies in compliance to Republic Act 9775 or the "Anti-Child Pornography Act of 2009"	
5.7	2x2:2 (2.4GHz) + 4x4:4 (5GHz) MU-MIMO 802.11ax	
5.8	3 Gbps* dual-radio aggregate frame rate	
5.9	24x7 real-time WIPS/WIDS, spectrum analytics, and WiFi location tracking via dedicated 3rd radio	
5.10	Integrated Bluetooth Low Energy Beacon	
5.11	Integrated scanning radio	
5.12	Enhanced transmit power and receive sensitivity	
5.13	Integrated enterprise security and guest access	
5.14	Application-aware traffic shaping	
5.15	Optimized for voice and video	
5.16	Self-configuring, plug-and-play deployment	
5.17	Sleek design blends into office environments	
5.18	Full-time Wi-Fi location tracking via dedicated 3rd radio	
5.19	<ul> <li>2.4 GHz 802.11b/g/n/ax client access radio</li> <li>2.4 GHz 802.11b/g/n/ax client access radio</li> <li>5 GHz 802.11a/n/ac/ax client access radio</li> <li>2.4 GHz &amp; 5 GHz dual-band WIDS/WIPS, spectrum analysis, &amp; location analytics radio</li> <li>2.4 GHz Bluetooth Low Energy (BLE) radio with Beacon and BLE scanning support</li> <li>Concurrent operation of all four radios</li> <li>Supported frequency bands (country-specific restrictions apply):</li> <li>2.412-2.484 GHz</li> <li>5.150-5.250 GHz (UNII-1)</li> </ul>	

	<ul> <li>5.470-5.600, 5.660-5.725 GHz (UNII-2e)</li> <li>5.725 -5.825 GHz (UNII-3)</li> </ul>	
5.20	Internal Antenna (5.1dBi max gain at 2.4 GHz, 5.9dBi max gain at 5 GHz)	
5.21	DL- OFDMA**, UL-OFDMA**, TWT support**, BSS	
	2.4GHz: 2 x 2 multiple input, multiple output (MIMO) with two	
	spatial streams 5GHz: 4 x 4 multiple input, multiple output (MIMO) with four	
	Spatial streams SU-MIMO, UL MU-MIMO** and DL MU-MIMO support	
	20 and 40 MHz channels (802.11n); 20, 40, and 80 MHz channels (802.11a); 20, 40 and 80 MHz channels	
	Up to 1024-QAM on both 2.4 GHz & 5 GHz bands Packet aggregation	
5.22	Power over Ethernet: 42.5 - 57 V (802.3at) or 37 - 57 V (802.3af) -	
	Alternative: 12 V DC input	
	Power consumption: 30W max (802.3at) or 15W max (802.3af) - low power mode **	
5.23	In low power mode, MR44 will do the following:	
	<ul><li>a. Downshift its Ethernet uplink speed from 2.5 Gbps to 1 Gbps</li><li>b. Transition from 4x4:4 to 2x2:2 in 5GHz</li></ul>	
	<ul><li>c. Disable its dedicated IoT (previously known as BLE) radio</li><li>d. Reduce the max Tx power</li></ul>	
5.24	1x 100/1000/2.5G BASE-T Ethernet (RJ45) 1x DC power connector (5.5 mm x 2.5 mm, center positive)	
5.25	All standard mounting hardware included Desktop, ceiling, and wall mount capable	
	Ceiling tile rail (9/16, 15/16 or 1 1/2" flush or recessed rails),	
	Bubble level on the mounting cradle for accurate horizontal wall	
5.26	Two security screw options (included) (13.5 mm long and 2.5 mm	
	diameter and 5 mm head) Kensington lock hard point	
5 07	Concealed mount plate with anti-tamper cable bay	
5.27	Humidity: 5 to 95% non-condensing	
5.28	Mean Time Between Failure (MTBF): 500,000 hours at +25°C operating temperature	
5.29	Integrated Layer 7 firewallwith mobile device policy management Real time WIDS/WIPS with electing and automatic roque AP	
	containment with Air Marshal	
5.30	AdvancedPower Save (U-APSD) WMM Access Categories with DSCP and 802.1p support	
5 21	Layer 7 application traffic identification and shaping	
5.51	Distributed or centralized layer 3 roaming	
5.32	Embeddedlocationanalyticsreportinganddevicetracking Global L7 trafficanalyticsreporting per network, per device, and per	

	app	lication	
	5.33 1 pc	ower/booting/firmware upgrade status	
	5.34 Rol For	HS additional country-specific regulatory information, please tact Meraki sales	
	5.35 Life	etimehardware warranty with advanced replacement included	
	5.36 For	the 50 units, 3 years Advanced License and Support	
	5.37 For	108 Units Transceiver:	
	5.38 Mu	stbe of the same brand as the Core, Distribution, and Access	
	swit com	tches and must be on the list of supported traceivers to ensure npatibility and easy troubleshooting	
	6. <u>Civil Wo</u>	orks Implementation	
	6.1 SCO	PE OF WORKS:	
	6.1.1	Site inspection, Roughing Ins Layout Inspection, Bending, condition, planning, site-kick off, Mobilization & Implementation	
	6.1.2	Supply, Delivery and Implementation of Copper (Cat6) & Fiber (FOC) Cable Roll-out & Roughing-ins Pulling	
	6.1.3	Supply, Delivery and Installation of Hangers, Catenaries and Supports for Vertical and Horizontal Cable Wire Ways	
	6.1.4	Supply, Delivery and Installation of Telecom Service Loop Cabinet (FTTX, E1/T1, VDSL, CATV) and MDF System Integration	
	6.1.5	Supply, Delivery and Installation of Powder Coated Cable Tray with Cover, Coupling, Grounding and elbow	
c	6.1.6	Supply, Delivery and Installation of IDF Racks (Floor: 2, 3, 5 & 6) and MDF Racks at 4/F allocated Server room white space	
O	6.1.7	Supply, Delivery and Installation of Copper and Fiber disconnection devices and modules	
	6.1.8	Supply, Delivery and Termination of End-to-end wiring building block and modules in compliance with ANSI TIA568B Standards	
	6.1.9	Harnessing, Grooming and Housekeeping for Cabling Infrastructure and Distribution	
	6.1.10	Project Management, Supervision, and Timely coordination	
	6.1.11	and Progress reporting to over all PM/Gencon Provide Fluke Networks Certifying Testing Reports for each	
		node for PASS/FAIL results with Soft & Hard Copy Test Results	
	6.1.12	Live Data Comm Network Infra Testing for IP Devices management access, WoL, Ping of Devices, VLAN Tunneling and other protocols	
	6.1.13	Provide Detailed As-Built Plan, Programming and Configurations Scripts and System Architecture for Operable proof	

6.1.1	4 Acceptance, Turnover & Conduct Technical Training & Knowledge Transfer to a designated Engr's/IT personnel of the Company	
6.2 B	LL OF OUANTITY:	
• 10	CT INFRA PASSIVE COMPONENTS	
 0	<b>13 rolls</b> - Category 6 U/UTP Installation Cable. Blue. Branded	
0	<b>42 pcs</b> - Category 6 Unshielded Navigator, Dual Type IDC,	
	White pc	
0	42 pcs - Category 6 Faceplate, Integral molding, w/o icon, 1-	
	Port, white	
0	<b>42 pcs</b> - Amco Box	
0	<b>11 units</b> - Category 6 Unshielded Patch Panel, Dual Type IDC,	
	24 Ports	
0	11 units - 19" 1U, Cable Management Plastic Holder Type,	
	Black	
0	42 units - Category 6/UTP Patch Cord, 30AWG(Blue), 1M	
0	42 units - Category 6/UTP Patch Cord, 30AWG(Blue), 2mtrs	
• 1	NTERMEDIATE DISTRIBUTION FRAME (IDF)	
0	2 racks - Wall Mount IDF Cabinet, height 2f, Closed type,	
	black	
0	2 units - IDF cooling fan, with three pins German-plug type,	
	1wire/2fans (cable length, 2M)	
0	2 units - IDF Power distribution units w/ aluminum body,	
	European type, 6 outlets, w/ surge protector, w/ LED switch	
	(1.5U)	
• 1	NTERMEDIATE DISTRIBUTION FRAME (IDF)	
0	500 meters - 8-Core FOC CABLES, OUTDOOR SM, FIG.8	
• <u>I</u>	NDOOR FOC SYSTEM	
0	1500 meters - 8-Core FOC CABLES, INDOOR/OUTDOOR	
	SM	
0	<b>29 units</b> - Fiber Optic Patch Panel (MAIN BODY, BLACK),	
	Loaded	
0	60 units - SC/PC Duplex MM Adapter w/ zirconia Sleeve	
0	<b>240 pcs</b> - Fiber optic pigtail SM, 1m	
0	<b>28 pcs</b> - SC/UPC-LC/UPC Duplex SM, 3M	
0	240 cores - FIBER FUSION TERMINATIONS	
0	1 lot - FOC OTDR TESTING, REPORTS &	
• (	V&H) CABLE PATHWAYS, CATENARIES, HANGERS,	
<u> </u>	UPPORTS & CONSOLIDATION ENCLOSURES	
0	<b>I lot</b> - V-H Powder Coated Cable Pathways, Cover, Coupling,	
	LIDOWS, REDUCET, WIVI Bracket, H-Supports, F-Conduit and	
	Accessories	
0	1 lot - V-H Consondated Enclosures (Indoor & Outdoor)	
0	1 lot - Telecom Conduits, Catenaries, Hangers & Supports	
0	Final Francisco Cable Lauder & Floor Mounting Pad	
• <u></u>	1 lot Labor Installation Commissioning & Testing	
0	1 Iot - Labor Installation, Commissioning& Testing	

Bidder	Certification/s:	
1.	Bidder must be an authorized partner/reseller of the brand being offered for a	
	minimum of at least 5years.	
2.	Bidder must submit associate certification/s for one (1) network & one (1)	
	wireless issued by the principal or manufacturer of the brand being offered.	
3.	Bidder must conduct internal training with the Department of Agrarian Reform -	
	IT Team.	

We commit to deliver the goods under the new packaging and consistent with the physical appearance and color of the sample submitted as required by the Procurement Service.

I hereby certify that the statement of compliance to the foregoing technical specifications are true and correct, otherwise, if found to be false either during bid evaluation or post-qualification, the same shall give rise to automatic disqualification of our bid.

Name of Company

Signature Over Printed Name of Authorized Representative

Date

<sup>\* [</sup>Bidders must state here either "**Comply**" or "Not **Comply**" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder's statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post- qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.]