



**Annex A**

***VSU Satellite Campuses Fiber Optic Cabling Requirements***

Fiber Optic Cable (3000meters) FO Cable Warranty must be provided

- Fiber Optic Cable with Messenger wire
- (loose tube) 12 core single mode fiber optic cable
- ISO/UL certified Fiber optical Cable
- Cable burial/Trenching of not less than 1 foot
- Isabel campus is the only campus that crosses national highway. Two riser needs to be added in crossing the highway.

MDF/IDF Data Cabinet

- All Fiber Optic will be terminated or spliced.
- Data Cabinet must be installed 2 feet below the ceiling.
- Data Cabinet must ISO/ UL compliant with built-in 2 fan. Front and side is removal with keylock. Built-in surge protect power strip. Tinted front door.
- Fiber patch panel complete with duplex LC connectors for all fiber core (12).
- All MDF and IDF must be properly grounded.

Active/Passive component (Warranty per active component must be provided)

- All MDF Switches must be: 24 ports SFP Fiber switch with 4 ports SFP+ uplinks, with lifetime warranty
- All IDF Switches must be: with 24 ports GE ports with 4 ports SFP+ ready and with lifetime warranty
- Patch panels, connectors and patch cord: LC/LC duplex single mode 1.5m
- UPS 1500VA
- Supplier must have a service unit same with the unit or same capability and replacement unit must be provided within 1 month.

Civil Works

- Pipe use HDPE (SDR11) Pipe 1" for burial
- 1" HDPE (SDR11) coupling to couple each HDPE (SDR11) pipe.
- Handhole size is 60"x60" x 12" deep (bottom not cemented) with cover and handle
- Handhole must be placed on sharp curves and pulling stations.
- At least 10 Handhole/Pulling station per campus

Technical Requirement

- Must be supervised and handled by a licensed ECE/PECE.
- Knowledgeable in fiber optic termination and testing.
- During the commissioning a fiber optic test report must be provided.
- Workmanship warranty period must be provided.



## Electrical Power Requirements

1. Must provide DIN rail type enclosure 8 circuit (Power Distribution Box-PVC)
2. DIN type circuit breaker 30 AMP/ 220-240V (industry standard/ISO/UL)
3. DIN type surge protection system 8kA (industry standard/ISO/UL)
4. Time delay DIN type 0-120 sec 10A (industry standard/ISO/UL)
5. Grounding Rod galvanize type 6 feet.
6. Includes clamp and grounding wire.
7. Bill of Quantities

Isabel Campus			
#	Description	No. of Units	Unit
1.) MDF Switch	Layer 3 Fiber Switch : 16 x SFP 100/1000 Mbps ports 8 x SFP dual personality ports - 10/100/1000BAS E-T RJ-45 or 100/1000BASE-X Combo Ports 4 x SFP+ fixed 1000/10000 SFP+ ports 1 x RJ-45 serial console port 2 x power supply slots(2 power supply included) 1 GB SDRAM 512 MB flash packet buffer size: 1.5 MB <b>MTBF (years)</b> <b>52.79</b>	1	Unit
2.) IDFs Switches	24 RJ-45 auto negotiating 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) · 4 SFP 1000 Mb/s ports · Supports a maximum of 24 autosensing 10/100/1000 ports plus 4 1000BASE-X SFP ports, or a combination, Throughput 41.7 Mp/s (64-byte packets), Routing/switching capacity 56 Gb/s <b>MTBF (years)</b> <b>120.48</b>	5	Unit



3.) Fiber patch cord	Cable Length: 3 Meter Cable Type: LC-LC Single Mode Duplex Color: Yellow High return loss, low insertion loss High reliability, high temperature stability Good exchangeability Push pull structure, compact size, dense type	20	unit
4.) SFP Transceivers	1 LC 1000BASE-LX port (IEEE 802.3z Type 1000BASE-LX); Duplex: full only	20	Unit
5.) Fiber patch panel	Plastic, Half loaded with 12 LC duplex adapters 2 pcs splice trays/holders, cable management, 2 pcs Cable glands, angled cable entry brackets ISO/IEC 118011:2017	20	
6.) Fiber Optic cable	Fiber Optic Cable with Messenger wire (loose tube) 12 core single mode fiber optic cable ISO/UL certified Fiber optical Cable Cable burial/Trenching of not less than 1 foot	1	Spool
7.) Data Cabinet	Data Cabinet must ISO/ UL compliant with built-in 2 fan. Front and side is removal with keylock. Built-in surge protect power strip. Tinted front door	5	Unit
8.) Grounding	Galvanized Grounding Rod, all switches and cabinet must be grounded	5	Unit
9.) Smart-UPS 1500VA	<ul style="list-style-type: none"> <li>Smart-UPS 1500VA</li> <li>Rackmount</li> </ul>	4	

## Villaba Campus

#	Description	No. of Units	Unit
1.) MDF	Layer 3 Fiber Switch : 16 x SFP 100/1000 Mbps ports 8 x SFP dual personality ports 10/100/1000BAS E-T RJ-45 or 100/1000BASE-X	1	Unit
	Combo Ports 4 x SFP+ fixed 1000/10000 SFP+ ports 1 x RJ-45 serial console port 2 x power supply slots(2 power supply included) 1 GB SDRAM 512 MB flash packet buffer size: 1.5 MB <b>MTBF (years)</b> <b>52.79</b>		



2.) IDFs Switches	24 RJ-45 autonegotiating 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) · 4 SFP 1000 Mb/s ports · Supports a maximum of 24 autosensing 10/100/1000 ports plus 4 1000BASE-X SFP ports, or a combination, Throughput 41.7 Mp/s (64-byte packets), Routing/switchin g capacity 56 Gb/s <b>MTBF (years)</b> <b>120.48</b>	5	Unit
3.) Fiber patch cord	Cable Length: 3 Meter Cable Type: LC-LC Single Mode Duplex Color: Yellow High return loss, low insertion loss High reliability, high temperature stability Good exchangeability Push pull structure, compact size, dense type	20	unit
4.) SFP Transceivers	1 LC 1000BASE-LX port (IEEE 802.3z Type 1000BASE-LX); Duplex: full only	20	Unit
5.) Fiber patch panel	12 ports LC Textured powder coated Steel Plastic, Half loaded with 12 LC duplex adapters 2 pcs splice trays/holders, cable management, 2 pcs Cable glands, angled cable entry brackets ISO/IEC 118011:2017	20	

6.) Fiber Optic cable	<ul style="list-style-type: none"> <li>• Fiber Optic Cable with Messenger wire</li> <li>• (loose tube) 12 core single mode fiber optic cable</li> <li>• ISO/UL certified Fiber optical Cable</li> <li>• Cable burial/Trenching of not less than 1 foot</li> </ul>	1	spool
7.) Data Cabinet	Data Cabinet must ISO/ UL compliant with built-in 2 fan. Front and side is removal with keylock. Built-in surge protect power strip. Tinted front door	5	Unit
8.) Grounding	Galvanized Grounding Rod, all switches and cabinet must be grounded	5	Unit
9.) Smart-UPS 1500VA	<ul style="list-style-type: none"> <li>• UPS 1500VA</li> <li>• Rackmount</li> </ul>	4	



Tolosa Campus			
#	Description	No. of Units	Unit
1.) MDF	Layer 3 Fiber Switch : 16 x SFP 100/1000 Mbps ports 8 x SFP dualpersonality ports - 10/100/1000BAS E-T RJ-45 or 100/1000BASE-X Combo Ports 4 x SFP+ fixed 1000/10000 SFP+ ports 1 x RJ-45 serial console port 2 x power supply slots(2 power supply included) 1 GB SDRAM 512 MB flash packet buffer size: 1.5 MB <b>MTBF (years)</b> <b>52.79</b>	1	Unit
2.) IDFs Switches	24 RJ-45 autonegotiating 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T)· 4 SFP 1000 Mb/s ports · Supports a maximum of 24 autosensing 10/100/1000 ports plus 4 1000BASE-X SFP ports, or a combination, Throughput 41.7 Mp/s (64-byte packets), Routing/switchin g capacity 56 Gb/s <b>MTBF (years) 120.48</b>	5	Unit

3.) Fiber patch cord	Cable Length: 3 Meter Cable Type: LC-LC Single Mode Duplex Color: Yellow High return loss, low insertion loss High reliability, high temperature stability Good exchangeability Push pull structure, compact size, dense type	20	unit
4.) SFP Transceivers	1 LC 1000BASE- LX port (IEEE 802.3z Type 1000BASE-LX); Duplex: full only	20	Unit



5.) Fiber patch panel	12 ports LC Textured powder coated Steel Plastic, Half loaded with 12 LC duplex adapters 2 pcs splice trays/holders, cable management, 2 pcs Cable glands, angled cable entry brackets ISO/IEC 118011:2017	20	
6.) Fiber Optic cable	<ul style="list-style-type: none"> <li>Fiber Optic Cable with Messenger wire (loose tube) 12 core single mode fiber optic cable</li> <li>ISO/UL certified Fiber optical Cable</li> </ul> Cable burial/Trenching of not less than 1 foot	1	Spool
7.) Data Cabinet	Data Cabinet must ISO/ UL compliant with built-in 2 fan. Front and side is removal with keylock. Built-in surge protect power strip. Tinted front door	5	Unit
8.) Grounding	Galvanized Grounding Rod, all switches and cabinet must be grounded	5	Unit
9.) Smart-UPS 1500VA	<ul style="list-style-type: none"> <li>Smart-UPS 1500VA</li> <li>Rackmount</li> </ul>	4	

**Alang-Alang Campus**

#	Description	No. of Units	Unit
1.) MDF	Layer 3 Fiber Switch : 16 x SFP 100/1000 Mbps ports 8 x SFP dualpersonality ports 10/100/1000BAS E-T RJ-45 or 100/1000BASE-X	1	Unit
	Combo Ports 4 x SFP+ fixed 1000/10000 SFP+ ports 1 x RJ-45 serial console port 2 x power supply slots(2 power supply included) 1 GB SDRAM 512 MB flash packet buffer size: 1.5 MB <b>MTBF (years) 52.79</b>		



2.) IDF's Switches	24 RJ-45 autonegotiating 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) · 4 SFP 1000 Mb/s ports · Supports a maximum of 24 autosensing 10/100/1000 ports plus 4 1000BASE-X SFP ports, or a combination, Throughput 41.7 Mp/s (64-byte packets), Routing/switching capacity 56 Gb/s <b>MTBF (years)</b> <b>120.48</b>	5	Unit
3.) Fiber patch cord	Cable Length: 3 Meter Cable Type: LC-LC Single Mode Duplex Color: Yellow High return loss, low insertion loss High reliability, high temperature stability Good exchangeability Push pull structure, compact size, dense type	20	unit
4.) SFP Transceivers	1 LC 1000BASE-LX port (IEEE 802.3z Type 1000BASE-LX); Duplex: full only	20	Unit
5.) Fiber patch panel	12 ports LC Textured powder coated Steel Plastic, Half loaded with 12 LC duplex adapters 2 pcs splice trays/holders, cable management, 2 pcs Cable glands, angled cable entry brackets ISO/IEC 118011:2017	20	Unit
6.) Fiber Optic cable	• Fiber Optic Cable with Messenger wire (loose tube) 12 core single mode fiber optic cable ISO/UL certified Fiber optical Cable Cable burial/Trenching of not less than 1 foot	1	spool
7.) Data Cabinet	Data Cabinet must ISO/ UL compliant with built-in 2 fan. Front and side is removal with keylock. Built-in surge protects power strip. Tinted front door	5	Unit
8.) Grounding	Galvanized Grounding Rod, all switches and cabinet must be grounded	5	Unit
9.) Smart-UPS 1500VA	• Smart-UPS 1500VA • Rackmount	4	



Main Campus			
#	Description	No. of Units	Unit
1.) MDF	Layer 3 Fiber Switch : 16 x SFP 100/1000 Mbps ports 8 x SFP dual personality ports - 10/100/1000BAS E-T RJ-45 or 100/1000BASE-X Combo Ports 4 x SFP+ fixed 1000/10000 SFP+ ports 1 x RJ-45 serial console port 2 x power supply slots(2 power supply included) 1 GB SDRAM 512 MB flash packet buffer size: 1.5 MB <b>MTBF (years)</b> <b>52.79</b>	1	Unit
2.) IDFs Switches	24 RJ-45 auto negotiating 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) · 4 SFP 1000 Mb/s ports · Supports a maximum of 24 autosensing 10/100/1000 ports plus 4 1000BASE-X SFP ports, or a combination, Throughput 41.7 Mp/s (64-byte packets), Routing/switching capacity 56 Gb/s <b>MTBF (years)</b> <b>120.48</b>	5	Unit
3.) Fiber patch cord	Cable Length: 3 Meter Cable Type: LC-LC Single Mode Duplex Color: Yellow High return loss, low insertion loss High reliability, high temperature stability Good Exchangeability Push pull structure, compact size, dense type	20	unit
4.) SFP Transceivers	1 LC 1000BASE- LX port (IEEE 802.3z Type 1000BASE-LX); Duplex: full only	20	Unit
5.) Fiber patch panel	12 ports LC Textured powder coated Steel Plastic, Half loaded with	20	





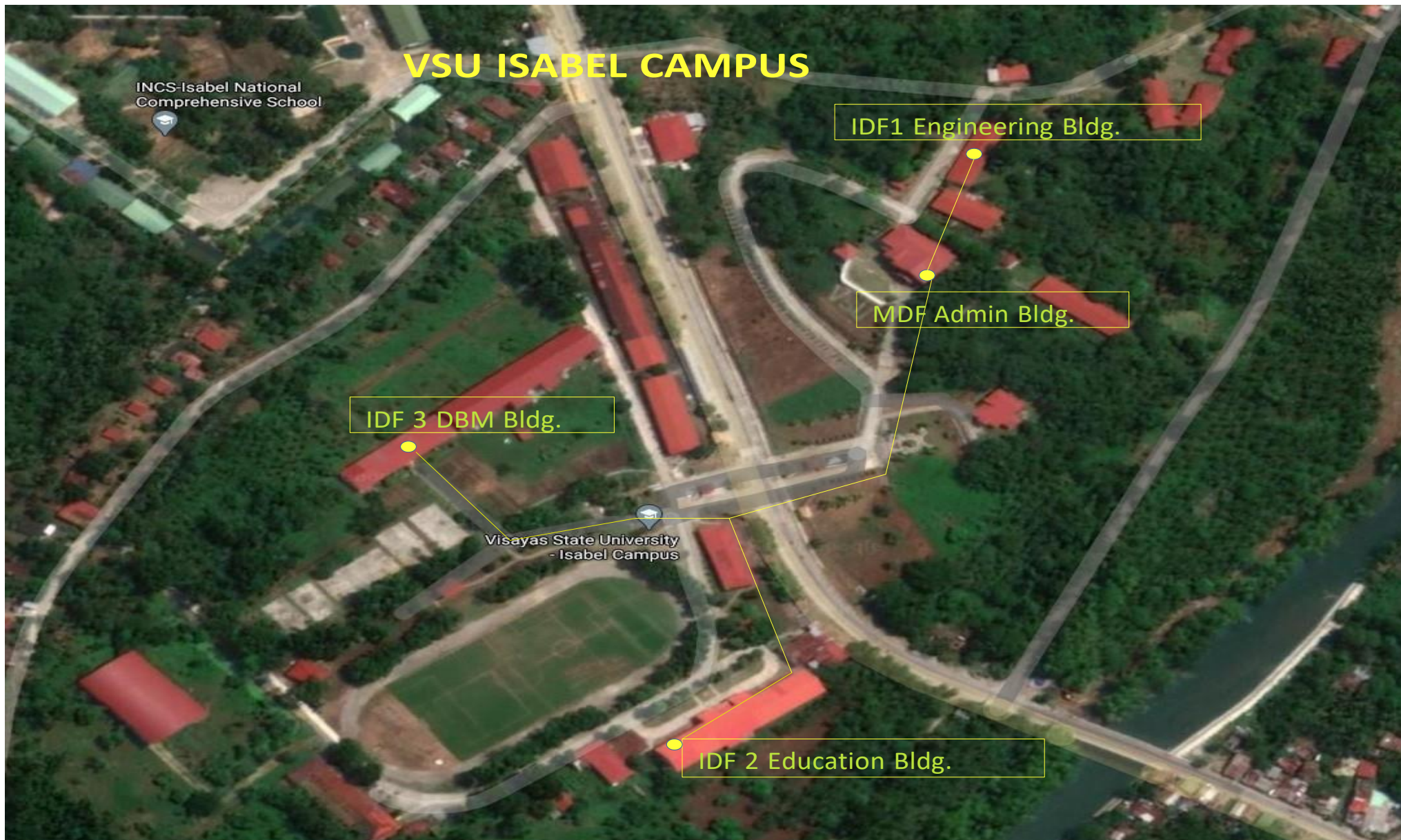
	12 LC duplex adapters 2 pcs splice trays/holders, cable management, 2 pcs Cable glands, angled cable entry brackets ISO/IEC 118011:2017		
6.) Fiber Optic cable	<ul style="list-style-type: none"> <li>Fiber Optic Cable with Messenger wire (loose tube) 12 core single mode fiber optic cable ISO/UL certified Fiber optical Cable Cable burial/Trenching of not less than 1 foot</li> </ul>	1	
7.) Data Cabinet 42u	2U 600mm Wide x 1060mm Deep Enclosure with Sides Black Maximum Height; 2057MM, 205.7CM Maximum Width"600MM, 60.0CM Maximum Depth: 1060MM, 106.0CM Net Weight: 112.2KG Shipping weight:131.5KG Shipping Height:2181MM, 218.1CM Shipping Width: 740MM, 74.0CM Shipping Depth: 1160MM, 116.0CM Color; Black Maximum : Mounting Depth : 777.0MM, 77.72CM Minimum Mounting Depth :168.0MM, 16.76CM Front Door : 16.0gauge Vertical Posts : 18.0gauge Rear Door : 16.0gauge Roof : 19.0gauge Side Panels 18.0gauge Weight Capacity (static load) 1000.17KG Weight Capacity(dynamic load) 459.94KG Protection Class IP20 Approvals EIA-310E, UL 2416, UL 60950-1 Standard warranty 5 year repair or replace RoHS Compliant	1	Unit
8.) Grounding	Galvanized Grounding Rod, all switches and cabinet must be grounded	5	Unit
9.) Smart-UPS 1500VA	<ul style="list-style-type: none"> <li>Smart-UPS 1500VA</li> <li>Rackmount</li> </ul>	1	



**VISAYAS**  
STATE UNIVERSITY

GOODS-21-03-R  
Supply, Delivery and Installation of Fiber Optic Backbone  
Cabling for MIS in VSU Component Colleges - Rebidding  
VSU Main. Visca. Bavyav City Levte

## *VSU Satellite Campuses Fiber Optic Cabling*







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## VILLABA CAMPUS

