TERMS OF REFERENCE
SUPPLY AND INSTALLATION OF CCTV PROJECT

I. Overview

These Terms of Reference (TOR) call for the supply and installation of a Closed-Circuit Television (CCTV) System between key buildings across the **University of the Philippines Mindanao** Campus:

1. The CCTV System includes but is not limited to the following:
   a. Control room setup and installation
   b. CCTV System and Repository
   c. CCTV Cameras
   d. LED Monitors in the Control Room
   e. Integration of existing and new CCTV Cameras and NVR
   f. Installation
      · Labor, Materials
      · Civil works (if any)
      · Electrical provision/installation
      · Setup and configuration
      · Testing and commissioning
      · Other necessary components
   g. Documentation
      · User manuals
      · Network Diagram
      · Line Diagram
      · Expansion plan (scalable design)
   h. User training
      · CCTV Control Room user-groups
      · Administrator user-groups
      · Mobile user-groups
   i. Warranty
      · Three (3) year warranty on hardware and software with next business day replacement for active devices.
   j. Technical Support
      · Two (2) years of on-site free labor and technical support
      · Two (2) years of 24x7 help desk facility and virtual technical support

This shall include the supply, installation, and testing of high-quality cables, connectors, related cabling hardware, outlets, cable trays, racks, interconnect hardware, or any applicable or necessary materials, supplies, or hardware, as well as construction, fabrication, restoration or works to undertake and complete the installation to the satisfaction of the End-User.

2. Installation of CCTV Cameras at the following locations:

    a. Entrance/Road networks
    b. Cultural Complex
    c. Sport Complex
    d. CARIM
    e. Staff Housing/Infirmary
    f. EBL New Building/ Student Dormitory
    g. EBL
    h. Library

3. Integration of CCTV at the Admin Building, Library, and EBL to the new CCTV System 3. Installation of monitors in the Control Room.

4. Installation of CCTV Signage at the entrances of all buildings covered and other strategic locations:
    a. Road networks
    b. Administration-CHSS Building
    c. College of Science and Math (CSM) Building & Complex
    d. Human Kinetics Center
    e. School of Management Building
    f. Kalimudan Student Complex
    g. Sports Complex Training Gym (Human Kinetics Building)

II. Breakdown of Required Materials & Labor:

1. CCTV System and Other hardware and software requirements (please see attached)

1.1. Software and Operating System:
    a) Windows-based
    b) With necessary OS and Software licenses
    c) Should be able to access specific buildings and camera location
    d) Should be able to display all CCTV cameras on the campus in the control room
    e) Should be able to display limited CCTV coverage as specified to specific users or user groups
    f) Intelligent and advanced software is preferred

1.2. Remote Access:
    a) Can be accessed through all mobile platforms (android, windows, IOS) through user accounts with restrictions
    b) Restrictions can be configured by specific location or CCTV camera

1.3. Storage:
    a) Should have an automatic backup system

2. CCTV Camera (Please see attached)

      a) Features: FHD cameras (have multiple advanced and special features like PTZ, IR, night vision, and other sensors, for viewing approaching objects);

3. POE injectors, media converter and switches, and other components (Please see attached)

4. Labor

      a) Setup and installation of the CCTV System including but not limited to cameras, monitors, and server/s
      b) Cable Laying and Pulling for video, network, and electrical provisions
      c) Installation and Roughing-ins of cable runways, pipes, clips, etc.
      d) Installation of housing hardware, and other similar equipment.
      e) Integration of existing CCTV cameras across buildings
      f) Testing and Documentation

5. Codes and Standards

5.1. Work shall be installed according to the latest Philippine Electric Code (PEC), Plumbing Code, National Structural Code of the Philippines, Fire Code of the Philippines, the National Building Code, and the "Compilation of Building Telecommunication Cabling Systems for Philippine Standards by BICSP".
5.2. Minimum technical standards covering the CCTV system shall adhere to, but are not limited to the following standards:

      a. Cabling and Components: ANSI/TIA/EIA-568-C.0, Generic Telecommunications Cabling for Customer Premises· ANSI/TIA/EIA-568-C.1, Commercial Building Telecommunications Cabling Standard
      b. Telecommunication Pathways · ANSI/TIA/EIA-568-B, Commercial Building Standard for Telecommunications Pathways and Spaces
      c. Grounding and Bonding· Philippine Electrical Code· ANSI J/STD-607-A-2002, Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications
      d. Administration and Labeling ANSI/TIA/EIA-606A-2002, Administration Standard for Commercial Telecommunications Infrastructure

5.3. Contractor must have at least a (D/C / B / A / AA / AAA) - Category License issued by the Philippine Contractors Accreditation Board (PCAB), classified under SP-CF (Specialty - Communication Facilities).· Contractor must have at least one (1) Employed Certified Professional of the brand they offer to ensure that the solution provided and the system to be implemented is based on standards.

III. CCTV INSTALLATION, DOCUMENTATION AND TESTING

1. Setup and Execution:

1.1. Contractor shall perform all items of work under the terms of reference; all equipment, labor, machinery, materials, tools, supplies, transportation, and incidental expenses necessary to prosecute the work to completion shall be shouldered by the Contractor.

1.2. Safety Measures: Contractors are required to install warning signs and barricades for the safety of the general public. All workers shall wear the necessary safety devices to ensure safety and proper identification throughout the project.

1.3. Identification and campus ingress/egress: contractors must submit the list of the names of their workers, machinery, and vehicles that will be entering campus premises to the Office of the Vice Chancellor for Administration, Information Technology Office, and the Physical Plant Office.

1.4. Contractor shall observe the proper installation of electrical and data wiring, cameras, monitor, etc. at all times during the installation to prevent kinking, damaging, or shortening the life of the cable and the equipment.

1.5. Labeling: All cables and hardware shall be identified and properly labeled using machine-printed labels with the Contractor's name, contact address and number, date of installation of the system, and the duration of the system warranty.

2. Testing Procedures:

2.1 Testing of CCTV should be done in all buildings and the control room.

2.2 All capabilities of the CCTV System should be working.

2.3 Network connectivity and viewing of all cameras should be stable and have no lags or delays.

2.4 All cameras should have no obstruction.

3. Submittals:

The contractor shall submit the following for approval:

3.1. Site Map and inter-building connectivity locations ("See Annex 1")

3.2. Technical data of system components;

3.3. Cable routing and terminations

3.4. Floor plan showing placement of cable trays, and other major components. Furthermore, the contractor shall provide three (3) sets of the following, upon project turnover:

3.5. Operation Manual(s)

3.6. Network Diagram

3.7. Line Diagram

3.8. Expansion Plan

IV. TECHNICAL SPECIFICATIONS

Item No	Description	Qty	Unit
1	HYBRID NETWORK VIDEO RECORDER Locations: 1. ADMIN BUILDING - 2 New CAMERAS 2. MAIN GATE - 1 New CAMERA 3. CSM BUILDING - 2 New CAMERAS 4. TRAINING GYM - 5 New CAMERAS 5. ELIAS B. LOPEZ BUILDING - 6 New CAMERAS 6. KALIMUDAN STUDENT CENTER - 5 New CAMERAS 7. CULTURAL BUILDING - 2 New CAMERAS 8. LIBRARY BUILDING - 1 New CAMERA ● At least 4K HDMI Video Output & 16MP Decoding Capacity Capacity[†]: Allows you to enjoy more channels, live view, and playback simultaneously. ● At least 8-ports PoE+, PoE Budget: 113 W ● At least 8-Channel Simultaneous Playback. Replay the feed from up to 8 cameras simultaneously, increase replay speed, and find events in the recorded video. ● At least H.265+ ● At least Two-Way Audio support ● At least ONVIF Compatibility ● At least support 24/7 Continuous Recording ● At least support up to 10 TB storage ● At least support Remote Monitoring: Should have a dedicated app, web UI, and Security Manager/VMS which enable remote monitoring, providing ease and convenience. ● At least 1 HDMI and 1 VGA Interface: Supports independent video output. ● At least Plug & Play: Allows new and unused IP Cameras to be added automatically to the new NVR and activated instantly, making installation faster. ● At least Rack Mounting: Space-saving and easy installation. ● At least include Perpetual license. Scope of Work: ● Supply, Installation, and Configuration for the Network Recorder/s/Network Video Recorder/s ● Supply, Installation, and Configuration of the Video Management Software for the NVR	8	Units

	● Supply, Installation, and Configuration of the Video Management Software Clients for the workstations (at least 5 clients) ● The Video Management Software Clients should support Microsoft Windows, MAC, IOS, and Android for remote management ● Should support the existing Bosch DIVAR IP all-in-one 7000 3U bundled with Video Management Software and should support Network Attached Storage (NAS). ● Should be the same brand with the new CCTV cameras to be supplied. ● At least Remote Monitoring ● At least 80 Mbps incoming bandwidth ● At least 60 Mbps outgoing bandwidth ● At least HDMI and VGA Video Outputs ● At least 3-year Warranty. Note: It is the supplier's responsibility to ensure that the hybrid NVRs provided have enough watts to power all the POE devices to be connected.		
2	HYBRID NETWORK VIDEO RECORDER (CARIM) - 3 NEW CAMERAS + 8 existing CAMERAS ● At least 4K HDMI Video Output & 16MP Decoding Capacity Capacity[†]: Allows you to enjoy more channels, live view, and playback simultaneously. ● At least 16-ports PoE+, PoE Budget: 140 W ● At least 16-Channel Simultaneous Playback. Replay the feed from up to 8 cameras simultaneously, increase replay speed, and find events in the video schedule. ● At least H.265+ ● At least Two-Way Audio support ● At least ONVIF Compatibility ● At least support 24/7 Continuous Recording ● At least support up to 24 TB storage ● At least support Remote Monitoring: Should have a dedicated app, web UI, and Security Manager/VMS which enable remote monitoring, providing ease and convenience. ● At least 1 HDMI and 1 VGA Interface: Supports independent video output. ● At least Plug & Play: Allows new and unused IP Cameras to be added automatically to the new NVR and activated instantly, making installation faster. At least Rack Mounting: Space-saving and easy installation. ● At least include Perpetual license. Scope of Work ● Supply, Installation, and Configuration for the Network Recorder/s/Network Video Recorder/s	1	Unit

	● Supply, Installation, and Configuration of the Video Management Software for the NVR ● Supply, Installation, and Configuration of the Video Management Software Clients for the workstations (at least 5 clients) ● The Video Management Software Clients should support Microsoft Windows, MAC, IOS, and Android for remote management ● Should support the existing Bosch DIVAR IP all-in-one 7000 3U bundled with Video Management Software and should support Network Attached Storage (NAS) ● Integrate existing 8 IP Cameras in CARIM 2 to the Hybrid Network Video Recorder ● Should be the same brand with the new CCTV cameras to be supplied. ● At least Remote Monitoring ● At least 80 Mbps incoming bandwidth ● At least 60 Mbps outgoing bandwidth ● At least HDMI and VGA Video Outputs ● At least 3-year Warranty Note: It is the supplier's responsibility to ensure that the hybrid NVRs provided have enough watts to power all the POE devices to be connected.		
3	At least 6TB 256MB Cache 3.5-inch SATA 6Gb/s Internal HDD for NVR of Admin Building, Main Gate, CSM, Cultural and Library Building -Supply, Installation, configuration, and testing in the respective NVRs	5	Units
4	At least 10TB 256MB Cache 3.5-inch SATA 6Gb/s Internal HDD - for NVR of CARIM, TRAINING GYM, EBL and KALIMUDAN Building -Supply, Installation, configuration, and testing in the respective NVRs	5	Units
5	OUTDOOR BULLET NETWORK CAMERA (2MP) ● SPEC: At least H.265+/H.265/H.264+/H.264, 1/3" ● At least Progressive Scan CMOS, Color/0.1 Lux@F2.0, 0 Lux with IR, 25fps/30fps ● At least (1920x1080,1280x960, 1280x720), PoE, 4 mm Fixed Lens ● At least should support and be compatible with the existing Bosch DIVAR IP all-in-one 7000 3U bundled with Video Management Software and should support Network Attached Storage (NAS) or if the supplied camera by the supplier is not Bosch compatible then they should include its own Network Recorders/Network Video Recorders (the same brand with the camera) and should support Network Attached Storage (NAS). ● FEATURE: At least Smart Detection (Human & Vehicle Classification) (Motion Detection, Area Intrusion Detection, Line-Crossing ● At least Camera Tampering Detection, Abandoned Object Detection, Object Removal Detection, Area Entrance	13	Units

	● At least Area Exiting Detection, Vehicle Detection, Human detection), Smart Vid (Smart IR, DWDR, 3D DNR, BLC), IR Night Vision (Up to 30 m), IP67, ONVIF, Remote Monitoring. ● At least Built-in Intelligent Video and Audio Analytics to trigger relevant alerts and quickly retrieve data ● At least Motion detect recording ● At least all cameras should be POE+ ● At least ONVIF-compliant ● At least include Perpetual license ● At least Smart H.264/H.265+ ● At least Include all necessary accessories for installation ● At least IP66 ● At least include POE cabling and protective tubing and installation of the cameras. ● Note: It is the supplier's responsibility to ensure that the cameras provided have enough watts powered from the hybrid NVRs.			
6	FULL COLOR TURRET NETWORK CAMERA (4MP) ● SPEC: At least H.265+/H.265/H.264+/H.264, 1/3" ● At least Progressive Scan CMOS, Color/0.04 Lux@F1.6, 0 Lux with IR/White Light, 25fps/30fps ● At least (2560x1440,2304x1296, 2048x1280, 1920x1080), ● At least should support and be compatible with the existing Bosch DIVAR IP all-in-one 7000 3U bundled with Video Management Software and should support Network Attached Storage (NAS) or if the supplied camera by the supplier is not Bosch compatible then they should include its own Network Recorders/Network Video Recorders (the same brand with the camera) and should support Network Attached Storage (NAS). ● At least PoE/12V DC, 4 mm Fixed Lens, Built-In Mic, Speaker, Micro SD Slot ● FEATURE At least: Full-Color/IR Night Vision (Up to 30 m), Active Defense, Two-Way Audio, On Board Storage, Smart Detection ● At least (Motion Detection (Human Targets Classification), Camera Tampering, Line Crossing, Area Intrusion), Smart Vid (Smart IR, WDR, 3D DNR, BLC), ONVIF, Remote Monitoring, ● At least Built-in Intelligent Video and Audio Analytics to trigger relevant alerts and quickly retrieve data ● At least motion detect recording ● At least all cameras should be POE+ ● At least ONVIF-compliant ● At least include Perpetual license ● At least Smart H.264/H.265+ ● At least Include all necessary accessories for installation ● At least IP66	5	Units	

	● At least include POE cabling and protective tubing and installation of the cameras. ● Note: It is the supplier's responsibility to ensure that the cameras provided have enough watts powered from the hybrid NVRs		
7	Full-Color Pan/Tilt Network Camera (4MP) ● SPEC: At least H.265+/H.265/H.264+/H.264, 1/3" ● At least Progressive Scan CMOS, Color/0.005 Lux@F1.6, 0 Lux with IR/White Light, 25fps/30fps ● At least (2560x1440,2304x1296, 2048x1280, 1920x1080), ● At least should support and be compatible with the existing Bosch DIVAR IP all-in-one 7000 3U bundled with Video Management Software and should support Network Attached Storage (NAS) or if the supplied camera by the supplier is not Bosch compatible then they should include its own Network Recorders/Network Video Recorders (the same brand with the camera) and should support Network Attached Storage (NAS). ● At least PoE/12V DC, 4 mm Fixed Lens, Built-In Microphone, Speaker, micro-SD Slot, IP66. ● FEATURE: At least Full-Color and IR Night Vision (Up to 30 m), Customized Patrol, Automatic Tracking, Active Defense, Two-Way Audio, On Board Storage, Smart Detection, Motion Detection (Human Targets Classification), Camera Tampering, Line-Crossing, Area Intrusion), Smart Vid (Smart IR, WDR, 3D DNR, BLC), ONVIF, Remote Monitoring. ● At least Built-in Intelligent Video and Audio Analytics to trigger relevant alerts and quickly retrieve data ● At least motion detect recording ● At least all cameras should be POE+ ● At least ONVIF-compliant ● At least include Perpetual license ● At least Smart H.264/H.265+ ● At least Include all necessary accessories for installation ● At least IP66 ● At least include POE cabling and protective tubing and installation of the cameras. ● Note: It is the supplier's responsibility to ensure that the cameras provided have enough watts powered from the hybrid NVRs	10	Units
8	Gigabit Single Mode Fiber to Ethernet Media Converter for long distance Camera At least Dual SC Fiber, 1000Base-LX to 10/100/1000Base-Tx Gigabit SMF Fiber SC to Copper RJ45 Ethernet Converter, UL Certified, up to 2km, 1550 nm TX, 1310 nm RX Includes:	17	Lot

	Termination of the MINI FIGURE 8 (4 CORE Fiber Cable) to the Gigabit Single Mode Fiber to Ethernet Media Converter At least 6m Factory Terminated Cat 6 Patch Cable to the switch. ● Note: It is the supplier's responsibility to ensure that all Media Converters are compatible with one another to ensure device functionality.		
9	Gigabit Single Mode Fiber to Ethernet Media Converter for long distance Cameras At least Dual SC Fiber, 1000Base-LX to 10/100/1000Base-Tx Gigabit SMF Fiber SC to Copper RJ45 Ethernet Converter, UL Certified, up to 2km, 1310 nm TX, 1550 nm RX Includes: Termination of the MINI FIGURE 8 (4 CORE Fiber Cable) to the Gigabit Single Mode Fiber to Ethernet Media Converter At least 6m Factory Terminated Cat 6 Patch Cable to the switch. ● Note: It is the supplier's responsibility to ensure that all Media Converters are compatible with one another to ensure device functionality.	17	Units
10	48V Passive PoE Injector Adapter PORT: 1× Gigabit PoE Port, 1× Gigabit Non-PoE Port SPEC: Data and Power Carried over The Same Cable At least 48V 18W Passive PoE Adapter ● Note: It is the supplier's responsibility to provide housing that is water-proof and weather-proof for the PoE	17	Units
11	At least 2 KM MINI FIGURE 8 (4 CORE Fiber Cable) ● Note: It is the supplier's responsibility to ensure that enough cable length will be supplied to ensure the project completion	1	Roll
12	At least Cat 6 Outdoor UTP Cable Pure Copper - 305 meters per roll • Category 6 U/UTP Installation Cable, Outdoor, Gel Filled, Oxygen free copper (99.97% purity), Support PoE long-distance transmission, Black Customized MDPE outer sheath; meets ANSI/TIA 568-C.2 flame retardant class certified. ● Note: It is the supplier's responsibility to ensure that enough cable length will be supplied to ensure the project completion	5	Rolls/Boxes
13	S-Clamp Tension Holder	170	Pieces
14	CCTV Stainless Box 400MM*300MM*180MM 0.4mm Thickness	9	Pieces

15	Electrical Drop Cable #16	1700	meters
16	Safety Circuit Breaker 15A	9	units
17	THHN #16 Electrical Wire	6	rolls
18	150 x 150 x 70mm Waterproof Box 	27	pieces
19	Consumables [screws, clamps, hose clamps, sealants, tapes (electrical, rubber), cable ties, guy wire, RJ45, etc.	1	Lot
20	Surveillance Monitors Scope of Work ● Supply, Installation, and configuration of the Surveillance Monitors with the NVR and workstations. ● At least 27" 4K Monitor ● At least 3840 x 2160 at 60 Hz ● Connectivity: At least 1 x HDMI, 1 x DisplayPort 1.2, 1 x 1 x Audio line-out ● At least VESA Mounting Interface ● At least the Panel Type is IPS ● At least Backlight LED ● At least with Comfort View ● At least Contrast Ratio: 1000:1 ● At least 3 years warranty ● Included: ○ 1 x HDMI cables ○ 1 x DisplayPort cables ○ Power cable ● Include installation in the existing workstations PC	2	Units

21	Desktop PC Motherboard: At least Intel H610 Chipset Motherboard Processor: At least Intel Core i5-12400F Processor 18M Cache, up to 4.40 GHz; 6 Cores 12Threads (Discrete Graphics Required) Graphics: At least 8GB RTX 4060 (At least DisplayPort x 3, At least HDMI x 1) System Memory: At least 16GB DDR4 3200MHz System Memory M.2 SSD Storage: At least 1TB M.2 NVME SSD Drive Chassis: At least Mid Tower Form Factor (2 Front USB 3.0, 1 Type C Port) Power Supply: At least 750 Watts 80 Plus High Efficiency Power Supply Operating System: Microsoft Windows 11 Professional At least UPS AVR 650 Watts / 1.2kVA At least with the Keyboard & Mouse Bundle Mouse Pad	1	Unit
22	Cleaning of the following existing cameras: ● BOSCH AUTODOME IP Dynamic 7000 HD with Camera Metal Post - 5 units ● BOSCH DINION IP Bullet 5000 HD - 15 units ● BOSCH FLEXIDOME IP indoor 5000 HD- 44 units	1	Lot
23	Supply, Installation, configuration, and testing of the Video Management System (VMS) -both existing and new cameras should be integrated into the Video Management System	1	Lot
24	Installation, termination, activation, configuration, supervision, documentation.	1	Lot
25	Knowledge Transfer and Training	1	Lot

Additional Requirements:

1. Bidder must attach an NDAA Certificate from the brand being offered.

2. Bidder must be certified by the brand offered, (attach TPNA certificates).

3. Bidder must have a physical office within the Mindanao area, including technical support and installers.

4. At least 3 years warranty and on-site support to all items

5. Note: The cabling distances required are the responsibility of the supplier/bidder to conduct actual site surveys of the area to determine the appropriate and needed distances to complete the project. Any additional equipment, accessories, and/or additional (CAT6a/ fiber optics cabling). requirements shall be provided by the winning service provider, without additional cost from UP Mindanao.

CAMERA LOCATION

UNIT	**CAMERA** LOCATION	**NVR** LOCATION
PAN AND TILT CAMERA(UTP)	ADMIN BUILDING ENTRANCE ATRIUM LEFT WING	ADMIN BUILDING
PAN AND TILT CAMERA(UTP)	ADMIN BUILDING ENTRANCE ATRIUM RIGHT WING	ADMIN BUILDING
PAN AND TILT CAMERA(FIBER)	MAIN GATE SURVEILLANCE	MAIN GATE
PAN AND TILT CAMERA(UTP)	SCHOOL OF MANAGEMENT BUILDING	CULTURAL BUILDING
PAN AND TILT CAMERA(UTP)	CSM BUILDING	CSM BUILDING
PAN AND TILT CAMERA(FIBER)	SPORT COMPLEX BUILDING	TRAINING GYM
PAN AND TILT CAMERA(UTP)	TRAINING GYM	TRAINING GYM
PAN AND TILT CAMERA(FIBER)	ELIAS B. LOPEZ HALL ROAD WAY -1	EBL BUILDING
PAN AND TILT CAMERA(FIBER)	ELIAZ B. LOPEZ HALL ROAD WAY – 2	EBL BUILDING
PAN AND TILT CAMERA(FIBER)	KALIMUDAN STUDENT CENTER (GOING TO INFIRMARY)	KALIMUDAN BUILDING
DOME NETWORK CAMERA(UTP)	CARIM DATA ROOM	CARIM BUILDING
DOME NETWORK CAMERA(FIBER)	CARIM ENTRANCE	CARIM BUILDING
DOME NETWORK CAMERA(UTP)	CULTURAL DATA ROOM	TRAINING GYM
DOME NETWORK CAMERA(UTP)	LIBRARY ENTRANCE	LIBRARY BUILDING
DOME NETWORK CAMERA(UTP)	STUDENT DORM BUILDING 1 ENTRANCE	EBL BUILDING
DOME NETWORK CAMERA(FIBER)	STUDENT DORM BUILDING 2 ENTRANCE	EBL BUILDING

BULLET NETWORK CAMERA(FIBER)	SPORT COMPLEX CAMPUS ENTRANCE	TRAINING GYM
BULLET NETWORK CAMERA(FIBER)	SPORT COMPLEX ROAD NETWORK INTERSECTION	TRAINING GYM
BULLET NETWORK CAMERA(FIBER)	CARIM ROAD NETWORK	CARIM BUILDING
BULLET NETWORK CAMERA(FIBER)	INFIRMARY ROAD NETWORK	KALIMUDAN BUILDING
BULLET NETWORK CAMERA(FIBER)	STAFF HOUSE ROAD NETWORK	KALIMUDAN BUILDING
BULLET NETWORK CAMERA(FIBER)	ENTRANCE 2 ROAD NETWORK	EBL BUILDING
BULLET NETWORK CAMERA(FIBER)	ENTRANCE 3 ROAD NETWORK	KALIMUDAN BUILDING
BULLET NETWORK CAMERA(FIBER)	ENTRANCE 4 ROAD NETWORK	CSM BUILDING
BULLET NETWORK CAMERA(UTP)	CULTURAL COMPLEX ENTRANCE	CULTURAL BUILDING
BULLET NETWORK CAMERA(FIBER)	WATER STATION ROAD NETWORK	KALIMUDAN BUILDING
BULLET NETWORK CAMERA(FIBER)	GATE 2 ENTRANCE	EBL BUILDING

UNIVERSITY OF THE PHILIPPINES MINDANAO

Annex 1   TOPOLOGY MAP

SPORTS COMPLEX STADIUM

TRAINING GYM

CULTURAL COMPLEX DATA ROOM

CULTURAL COMPLEX ENTRANCE

SCHOOL OF MANAGEMENT BUILDING

CULTURAL COMPLEX ROAD

ADMIN BUILDING ENTRANCE ATRIUM LEFT WING

ADMIN BUILDING ENTRANCE ATRIUM LEFT

MAIN GATE SURVEILLANCE

KALIMUDAN CENTER

INFIRMARY ROAD NETWORK

WATERPUMP ROAD NETWORK

ENTRANCE 3 ROAD NETWORK

STAFF HOUSE ROAD NETWORK

GATE 2 ENTRANCE

EBL 1 ROADWAY

EBL 1 ENTRANCE

EBL 2 ENTRANCE

EBL 2 ROADWAY

LIBRARY ENTRANCE

CARIM ENTRANCE

CARIM DATA ROOM

CARIM ROAD NETWORK

CSM BUILDING

ENTRANCE 4 ROAD NETWORK

SPORTS COMPLEX ENTRANCE

SPORTS COMPLEX INTERSECTION