

TERMS OF REFERENCE

Procurement of Preventive Maintenance Services for the International Cable Landing Stations and Repeater Stations Facilities

I. Background of Item Being Procured

A. General Overview of the Procurement Project

The Department of Information and Communications Technology (DICT) is in charge of the planning, development, and promotion of the national ICT development agenda, pursuant to the Republic Act 10844. As such, the DICT is undertaking policy and regulatory reform; with express focus on the review, amendment, and development of critical laws, policies, and regulation that govern the ICT and telecommunications environment necessary to the effective implementation of the National Broadband Plan (NBP) and its infrastructure projects.

The DICT, in collaboration with the Bases Conversion Development Authority (BCDA), entered into an agreement to build a High-Speed Internet Infrastructure – the Luzon Bypass Infrastructure. Among the components are the two (2) Cable Landing Station (CLS) and four (4) Repeater Station facilities.

In accordance with this undertaking, DICT is tasked to operate and maintain the Cable Landing Station (CLS) and Repeater Station (RS) building facility, including the equipment, devices, and systems installed inside the facility.

B. Brief Description of the Item Being Procured

The project covers the procurement of Preventive Maintenance Services of the Cable Landing Station (CLS) and Repeater Station (RS) building facilities. This includes the equipment, devices, and systems installed inside the facility such as Generator Sets, Automatic Transfer Switches, Direct and Alternating Current Power Systems, Air-Conditioning Systems, Fire Suppression Systems, Building Management System, and Security System.

C. Approved Budget for the Contract (ABC) of Project and Fund Source

1. The ABC of the Project is Seven Million One Hundred Fifty Thousand Pesos (Php 7,150,000.00).
2. The ABC is inclusive of 12% Value Added Tax (VAT)

II. Purpose of the Procurement

A. Purpose

The purpose of this project is to ensure the government network and internet services for the public via Luzon Bypass Infrastructure (LBI) facilities are operational twenty-four (24) hours a day, seven (7) days a week, and immediate restoration/repairs will be done on the occasion that there are equipment failure and power outages.

The Luzon Bypass Infrastructure facilities consist of two (2) International Cable Landing Stations (ICLS) and four (4) Repeater Stations (RS). Below at the list of stations;

Cable Landing Stations (CLS)	
1.	Baler CLS: Aurora Trading Center, Baler, Aurora
2.	San Fernando CLS: Poro Point, San Fernando, La Union
Repeater Stations (RS)	
1.	Pantabangan RS: Brgy. Marikit, Pantabangan, Nueva Ecija
2.	San Jose RS: Brgy. Tulat, San Jose City, Nueva Ecija
3.	Sta. Maria RS: Poblacion, Sta. Maria, Pangasinan
4.	Rosario RS: Brgy. Cataguingtan, Rosario, La Union

III. Mode of Procurement

A. The mode of procurement is Public Bidding.

IV. Nature of Procurement

A. The nature of procurement is Goods and Services

V. Preventive Maintenance Services Scope of Works

A. Quarterly Preventive Maintenance Services

1. Generator, Automatic Transfer Switches, AC Power System

a.) General Scope of Works

Supply of labor, tools and equipment, consumable materials for preventive maintenance (i.e. oil, oil filter, fuel filter, air filter, etc.), ancillary materials, technical competence, and supervision for the preventive maintenance of Generator set, Automatic Transfer Switch, and AC panels.

b.) The preventive maintenance works should be done within the approved manufacturer maintenance procedures. Below is the detailed scope of works but not limited to:

1.) CLS and RS Generator Set

(a) Quarterly Preventive Maintenance

- (1) Perform a capacity loadtest on batteries.
- (2) Check battery charger for proper operation.
- (3) The entire cooling system will be checked for leaks and brittle hoses, all hose clamps will be tightened as required.
- (4) The fan hub will be lubricated with the recommended grease, if applicable.

- (5) The jacket water heaters will be checked for proper operation.
 - (6) Check the engine for leaks in the fuel, lubrication, and air inlet. Special attention will be given to the water pump, turbocharger, and rear main seal areas.
 - (7) Check the oil level – maintain at a proper level.
 - (8) The exhaust condensate trap will be opened to drain possible water out of the system if applicable.
 - (9) The exhaust condensate trap will be opened to drain possible water out of the system if applicable.
 - (10) The unit will be run for 15 minutes and oil pressure, fuel pressure, charging amps, voltage, and frequency. Engine temperature will be recorded.
 - (11) Check the engine safety shutdowns for proper operations, if applicable.
 - (12) Check fuel level – notify end-user if below ½ tank.
- (b) Annually (at 4th Quarter PM) Preventive Maintenance or based on the approved manufacturer maintenance procedures. Subject to the approval by the end-user.
- (1) Change oil.
 - (2) Change filters (diesel fuel filter, oil filter, and air filter).
 - (3) Check and clean the radiator, if necessary.
 - (4) Fuel tank - drain water and sediment.
 - (5) Clean engine crankcase breather, if applicable.
 - (6) Governor - check and maintain oil level, if required.
 - (7) Lubricate the governor linkage and check the governor response on-ramp to rated speed for proper adjustment.
 - (8) Check glow plugs for proper operation, as applicable.
 - (9) Check for signs of leaky nozzles; advice on course of action.
 - (10) Pressure check cooling system. Check for proper inhibitor balance.
- (c) As needed: Generator Winding - Annually (1st PM, starting 2nd year). Subject to the approval by the end-user.
- (1) Check the generator slip rings and brushes as applicable for wear and proper conditions.
 - (2) Check the line to line voltage and adjust the voltage regulator to specifications as required.
 - (3) Lubricate the generator bearings(s) as applicable using lubricant specified by the generator manufacturer.
 - (4) Check the engine/generator alignment. Note: This should only be done if a problem is indicated or the coupling has been disturbed for maintenance purposes.

2.) CLS and RS Automatic Transfer Switch (ATS)

(a) Quarterly Preventive Maintenance

(1) General Condition of Transfer Switch and Controls

- Inspect the outside of the transfer switch for any indication of wear, excessive vibration, leakage, high temperature, contamination, or other deterioration.
- Verify all external components are in place, firm, tightened, and not excessively worn.

(2) Control System

- Exercise the generator set under load.
- Test the transfer switch's automatic control system.

(b) Annually (at 4th Quarter PM) Preventive Maintenance

(1) General Condition of Transfer Switch and Controls

- Inspect the inside of the transfer switch for any indication of excessive vibration, leakage, high temperature, contamination, or any other deterioration.
- Verify all internal components are in place, firm, tightened, and not excessively worn.

(2) Control System

- Test all indicators (LEDs) and all remote-control systems for operation.

(3) Electrical System

- Check wiring and connections are tight with no discoloration of metal, melted plastic, and odor indicating excessive heat.
- Verify contactor's external operating mechanism is clean and re-lubricate if found dirty.
- Check for any deterioration of wiring insulation such as cuts and abrasions. Replace or repair any damaged wiring.
- Check the tightness of wiring connections. Retighten to specification if any loose wiring is found.
- Check ATS main power switching contacts condition. Clean or replace. Replace contactor assembly if necessary.

3.) AC Panels and Circuit Breakers

(a) Quarterly Preventive Maintenance

- (1) Clean the insulating parts including the bushings.
- (2) Check the alignment and condition of movable and stationary contacts and adjust them per the manufacturer's data.
- (3) See that bolts, nuts, washers, cotter pins, and all terminal connections are in place and tight.
- (4) Check arc chutes for damage and replace damaged parts.
- (5) Clean and lubricate the operating mechanism and adjust it as described in the instruction book. If the operating mechanism cannot be brought into specified tolerances, it will usually indicate excessive wear and the need for a complete overhaul.

- (6) Check, after servicing, circuit breaker to verify that contacts move to the fully opened and fully closed positions, that there is an absence of friction or binding, and that electrical operation is functional.

2. DC Power Systems

a.) General Scope of Works

Supply of labor, tools and equipment, materials for preventive maintenance, ancillary materials, technical competence and supervision for the preventive maintenance of DC Power System

- b.) The preventive maintenance works should be done within the approved manufacturer maintenance procedures. Below is the detailed Scope of Works but not limited to:

1.) DC Power Plant and Rectifiers Quarterly Preventive Maintenance

- (a) Check general appearance and cleanliness of DC Plant room.
- (b) Visually inspect Power Bays and Rectifiers for loose foreign items and heat spots.
- (c) Check any audible and visual alarms and verify alarms are working properly and reporting accurately.
- (d) Verify covers and panels are in place.
- (e) Verify proper Plant Voltages at Rectifiers, Batteries, and Meter & Alarm Panel.
- (f) Check operation and calibration of Plant Volt and Amp Meter.
- (g) Record load and output voltages.
- (h) Verify and adjust DC float voltage to maximize battery life & reserve.
- (i) Calculate the percentage of n+1 rectifier capacity on the power plant.
- (j) Calculate the percentage of n+1 battery capacity.
- (k) Verify rectifier voltage and amperage setting.
- (l) Verify Rectifier voltage and amperage setting: High Voltage (HV).
- (m) Verify proper operation of rectifier cooling fans
- (n) Verify Alarms are extended to Meter and Alarm Panel.
- (o) Perform thermal inspection and temperature scan of internal components, circuitry, and all rectifier-related cabling and connections. **See note
- (p) Check safety equipment conditions, gloves, eye wash kit, etc.
- (q) Check general appearance and cleanliness of battery room and batteries.
- (r) Check for corrosion on terminal post and connector, clean and re-secure, as needed.
- (s) Measure and record ambient room temperature.
- (t) Measure and record overall system DC float voltage and
- (u) current levels.
- (v) Measure and record each cell terminal voltage.

Recommendations:

**Report any conditions that are inconsistent with "normal" readings.

No un-plated bus connections can be over 70 degrees C.

No plated bus connections can be over 90 degrees C.

No cable lug to bus connections can be over 70 degrees C.

No front panel touchpoints (typically at the DC distribution Circuit Breakers) can be over 50 degrees C.

These limits should not be violated. Compare temperatures of similar types of points and investigate any points running higher than the “norm*” for that type.

2.) Battery Quarterly Preventive Maintenance

- (a) Check safety equipment conditions, gloves, eye wash kit, etc.
- (b) Check general appearance and cleanliness of battery room and batteries.
- (c) Check for corrosion on terminal post and connector, clean and re-secure, as needed.
- (d) Measure and record ambient room temperature.
- (e) Measure and record overall system DC float voltage and current levels.
- (f) Measure and record each cell terminal voltage.

3. Uninterruptible Power Supply (UPS) and Inverter System

a.) General Scope of Works

Supply of labor, tools and equipment, materials for preventive maintenance, ancillary materials, technical competence, and supervision for the preventive maintenance of UPS and Inverter.

- b.) The preventive maintenance works should be done within the approved manufacturer maintenance procedures. Below is the detailed Scope of Works but not limited to:

1.) Quarterly Preventive Maintenance

- (a) Consult with personnel responsible for the equipment.
- (b) Visually inspect all internal sub-assemblies and major components, this includes exhaust fans, input/output filter assembly, rectifier/inverter assembly, etc.
- (c) Clean any foreign material and dust from internal components if the system is down.
- (d) Thorough check-up on the accuracy and integrity of electrical connections.
- (e) Check-up of cables and miscellaneous materials such as nuts, bolts, screws, and connectors for connection tightness and inspect for broken damaged, or burned components using thermoscanner.
- (f) Check the status of all alarms stored in the UPS memory.
- (g) Measure and record voltage & current.
- (h) Calibrate equipment to Manufacturer's specifications if required.
- (i) Check the normal operation of the system.
- (j) Comprehensive check-up of batteries, measure and record individual float and ripple voltages.
- (k) Check battery transfer/discharge and perform a short duration battery-run.
- (l) Perform any required Engineering Field changes if required.

- (m) Return unit to operational service with the normal load then verify the output in case the system was set to maintenance bypass.
- (n) Annual Battery Test must be conducted during the first quarterly preventive maintenance. Data and results must be submitted to DICT one week after the test.
- (o) Maximum response time of four (4) hours for corrective repairs of Uninterruptable Power Supply (UPS) system.

4. Heating Ventilation and Air-Conditioning (HVAC) System

a.) General Scope of Works

Supply of labor, tools and equipment, materials for preventive maintenance, ancillary materials, technical competence, and supervision for the preventive maintenance of HVAC System.

b.) The preventive maintenance works should be done within the approved manufacturer maintenance procedures. Below is the detailed Scope of Works but not limited to:

1.) Air Filter Quarterly Preventive Maintenance Procedures:

- (a) Clean or replace (if necessary) the air filter whenever it is visibly dirty. Never operate the unit without any filter in place.

2.) Evaporator Quarterly Preventive Maintenance Procedures:

- (a) If the evaporator becomes clogged or dirty, it may be cleaned by careful vacuuming or with a commercial evaporator cleaning spray. DO NOT use a solvent containing bleach, acetone, or flammable substances.
- (b) Turn off power before cleaning. Make sure not to wet any of the electrical components. Be sure the unit has dried before restarting.

3.) Condenser Quarterly Preventive Maintenance Procedures:

- (a) Inspect the outdoor condenser coil and the cabinet air reliefs for dirt or obstructions. Removes foreign object.
- (b) Clean condenser coil, wash with commercial solvent intended for the purpose. TURN OFF POWER BEFORE CLEANING!
- (c) Be sure that all electrical components are thoroughly dry before restoring power.

4.) Cabinet

- (a) Clean the cabinet with a sponge and warm soapy water or a mild detergent.
- (b) Do not use bleach, abrasive chemicals, or harmful solvents.

5.) Drains

- (a) Check the primary and secondary condensate drains.
- (b) Check the secondary drain standpipe. Remove any obstruction, an obstruction will force water to dump into the middle of the unit and drain out the sides causing discoloration of the side panels.
- (c) If discoloration is noted, service the drains.
- (d) If a commercial drain solvent is used, flush out the drain pan and system with plenty of freshwater to prevent corrosion.

6.) Lubrication

(a) Oiling of the condenser fan motor or the evaporator blower is not recommended.

7.) Observe the equipment's operation for any signs of abnormality.

8.) Return unit to operational service with the normal load then verify the output.

9.) Submission of Comprehensive PM Checklist Report, to include, if any, recommendation on part/s that need/s replacement.

10.) Provide quotation for any needed part/s, and other repair service works not covered by the quarterly PM Service.

5. Fire Detection and Suppression System

a.) General Scope of Works

Supply of labor, tools and equipment, materials for preventive maintenance, ancillary materials, technical competence, and supervision for the preventive maintenance of Fire Suppression System

b.) The preventive maintenance works should be done within the approved manufacturer maintenance procedures. Below is the detailed Scope of Works but not limited to:

Before proceeding with any testing, all persons and facilities who may receive an alarm, supervisory, or trouble signal shall be notified to prevent an unnecessary response. At the conclusion of the testing, those previously notified (and others necessary) shall be further notified that testing has been concluded.

Testing personnel shall be qualified and experienced in the inspection, testing, and maintenance of Clean Agent Fire Suppression System and Fire Alarm and Detection Systems. Only qualified service personnel familiar with the systems and equipment used shall be permitted to perform the required tests

1.) Quarterly Preventive Maintenance:

(a) Inspection

(1) Hazard Enclosure

- Check original installation for any changes and equipment that have not been replaced, modified, or relocated. Verify if the hazard volumes are still the same and no walls or partition have been added.
- Verify if the protected room is effectively sealed for any significant air leaks that could result in agent leakage and a failure of the enclosure to hold the specified agent concentration level for the specified holding period.

(2) Agent Cylinder

- Verify all containers and brackets are securely fastened. Check the mounting position of horizontally mounted containers.
- Verify the weight of the agent in each cylinder matches the agent stamped on the label.
- Check all container's pressure gauges. They should be reading 360 PSIG at 21 °C or 70 °F.

- Check Solenoid Valve/Gas cartridge Actuator leads and wiring to agent release modules for corrosion and loosen or broken wires.

(3) Piping and Nozzles

- Verify discharge nozzles and pipe size if in accordance with the system drawings. Checked means of pipe size reduction and attitudes of tees if conform to the design.
- Verify that piping joints & discharge nozzles are securely fastened to prevent unacceptable vertical or lateral movement during discharge.
- Verify that the piping distribution system internally to detect the possibility of any oil or particulate matter soiling the hazard area or affecting the agent distribution due to a reduction in the effective nozzle orifice area.
- Verify that that nozzle deflectors are positioned to obtain maximum benefit.
- Verify that discharge nozzle, pipe and fittings are in good condition and free of mechanical damage, corrosion, and misalignment

(4) Pipe Supports and Braces

- Inspect pipe supports hangers and braces for loose, corrosion, and physical damage.

(5) Fire Detection, Alarm, Releasing Devices and Peripherals

- Verify that all wiring systems are properly installed in compliance with local codes and the system drawings.
- Verify that the control panel is properly installed and readily accessible.
- Check that all end-of-line resistors have been installed at the last field devices and not at the control panel.
- Verify that alternating current (ac) and direct current (dc) wiring are not combined in a common conduit or raceway unless properly shielded and grounded.
- Verify that all field circuits are free of ground faults and short circuits.
- Check that control panel power supplied to the control unit from a separate dedicated source that will not be shut down on system operation.
- Verify that adequate and reliable primary and 24-hour minimum standby sources of energy are used to provide for the operation of the detection, signaling, control, and actuation requirements of the system.
- Verify that all auxiliary functions such as alarm-sounding air-handling shutdown, and power shutdown for proper operation in accordance with the system requirements.
- Verify that the detection devices are in the proper type and location as specified on the system drawings.

- Verify that detectors are not located near obstructions or air ventilation and cooling equipment that would appreciably affect their response characteristics.
- Verify that manual pull stations are properly installed, readily accessible, accurately identified, and properly protected to prevent damage.
- Verify all manual stations used to release agents require two separate and distinct actions for operation and properly identified.
- Verify that the main/reserve switch is properly installed, readily accessible, and clearly identified.

(b) Testing (Subject to approval by the end-user)

- (1) If the system is connected to an alarm receiving office, notify the alarm receiving office that the fire system test is to be conducted and that an emergency response by the fire department or alarm station personnel is not desired. Notify all concerned personnel at the end-user's facility that a test is to be conducted and instruct personnel as to the sequence of operation.
- (2) Disable each solenoid valve/agent storage container release mechanism so that activation of the release circuit will not release the agent. Reconnect the release circuit with a functional device in place of each agent storage container release mechanism. For electrically actuated release mechanisms, these devices can include 24-V lamps or flashbulbs.
- (3) Verify that the control panel is connected to a dedicated circuit and labeled properly.
- (4) Verify that control panels are readily accessible yet restricted from unauthorized personnel. Using a smoke tester, operate detection initiating circuit(s). Check each detector for proper response. Verify that all alarm functions occur according to the design specification.
- (5) Operate the necessary circuit to initiate a second alarm circuit if present. Check each detector for proper response. Verify that all second alarm functions occur according to design specifications.
- (6) Operate manual release. Verify that manual release functions occur according to design specifications.
- (7) Operate the abort switch circuit if supplied. Verify that abort functions occur according to design specifications. Confirm that visual and audible supervisory signals are received at the control panel.
- (8) Test all supervised circuits for proper trouble response.
- (9) Operate one of each type of input device while on standby power. Verify that an alarm signal is received at the remote panel after the device is operated. Reconnect primary power supply.
- (10) Operate each type of alarm condition on each signal circuit and verify receipt of trouble condition at the remote station.

6. Building Management System (BMS)

a.) General Scope of Works

Supply of labor, tools and equipment, materials for preventive maintenance, ancillary materials, technical competence, and supervision for the preventive maintenance of Building Management System.

- b.) The preventive maintenance works should be done within the approved manufacturer maintenance procedures. Below is the detailed Scope of Works but not limited to:

1.) Quarterly Preventive Maintenance

- (a) Check and Verify the various systems connected to the BMS if it is updating properly.
- (b) Check Input Voltage Measurement (-48Vdc nominal. You will measure the DC Plant's float voltage of approximately -54Vdc).
- (c) Check the Power Supply Breakers on DC Plant.
- (d) Check the interface cabling for the sensors or controls causing any problems.
- (e) Check the fuses, verify if they are in good condition.
 - (1) F1 is a DC input fuse.
 - (2) F2 is HVAC 2 (24Vac coming from HVAC 2)
 - (3) F3 is HVAC 1 (24Vac coming from HVAC 2)

7. Security System

a.) General Scope of Works

Supply of labor, tools and equipment, materials for preventive maintenance, ancillary materials, technical competence, and supervision for the preventive maintenance of Security Systems.

- b.) The preventive maintenance works should be done within the approved manufacturer maintenance procedures. Below is the detailed Scope of Works but not limited to:

1.) Quarterly Preventive Maintenance

(a) Door Access

- (1) Visually inspect all system components. Check for any damage.
- (2) Test access and exit with a valid access card. Check audit trail for correct results
- (3) Test access with an invalid access card. Ensure that access is denied, and the proper alarms are raised on Access Control Server.
- (4) Remove some wiring from the DRI (i.e. card reader) that would simulate tampering. Ensure that proper and expected alarms are raised on Access Control Server.
- (5) Measure power supply voltages. Confirm within the nominal range.
- (6) Check battery condition. Replace as required.

(b) Security Cameras and Network Video Recorder

- (1) Check outdoor and indoor camera lenses, Clean for any dirt.
- (2) Check camera enclosures/housing check for any leaks, it should remain waterproof at all times.

- (3) Check out all connectors for signs of corrosion. Replace immediately the corroded connectors.
- (4) Ensure that all cables are connected securely. Ensure that the monitor, DVR, and security cameras are all receiving power.
- (5) Check the cabling for any signs of wear and tear, replace any exposed wire immediately.
- (6) Check the power supplies of all security system components, ensure that there is no loss of power due to storms, tampering, brownouts, or other unwanted events.
- (7) Check the UPS to ensure the battery are fully charged and don't show any warning lights.
- (8) Check the Video Recorder regularly for any dust, wipe any dirt found.
- (9) Verify the recording function.
- (10) Periodically review camera position setups
- (11) Set the correct date and time

B. Schedule of Services, List of Equipment, Devices, and Systems for Quarterly Preventive Maintenance Service.

a.) Quarterly Preventive Maintenance Services Schedule

- 1.) To avoid having too many Preventive Maintenance (PM) tasks due at the same time, the equipment shall be serviced on a rotational basis.

To ensure timely and uniform maintenance on all equipment, the winning bidder shall submit a quarterly preventive maintenance schedule a week after the receipt of Notice to Proceed to the end-user for approval.

- 2.) Below is the timeframe for quarterly preventive maintenance.

Period	Timeframe
1 st Quarter PM	January 01 to March 31
2 nd Quarter PM	April 01 to June 30
3 rd Quarter PM	July 01 to Aug 31
4 th Quarter PM	Sep 30 to Dec 31

b.) List of Equipment, Devices, and Systems for Quarterly Preventive Maintenance

Item	Particulars	Qty.	Qty.	Qty.	Qty.	Qty.	Qty.
		Baler	SFLU	RS1	RS2	RS3	RS4
1	Generator, ATS, and AC Power 400 kVA FG Wilson P438-3	2	2				
2	ATS1: GE Zenith ZBTS Series ATS	1	1				
3	ATS2: GE Zenith ZTS Series ATS	1	1				
4	Primary and Secondary AC Panels	2	2				
5	30kVA FG Wilson P26-3S			2	2	2	2
6	ATS1: ASCO D300L Power Transfer Load Center			1	1	1	1
7	ATS2: ASCO 7000 Power Transfer Switch			1	1	1	1
	DC Power System (DCPS)	Baler	SFLU	RS1	RS2	RS3	RS4
8	GE GPS 4830 Power System	2	2				

9	Rectifier Module: GE GP100H3R48TEZ	38	38				
10	Battery: Deka UNIGY I, 12V, 200AH	112	112				
11	General Electric Infinity S System			2	2	2	2
12	Rectifier Module: GE NE050AC48ATEZ			4	4	4	4
13	Battery: Deka UNIGY I, 12V, 200AH			8	8	8	8
	UPS and Inverter	Baler	SFLU	RS1	RS2	RS2	RS4
14	GE GT Series 10kVA	2	2				
15	CE+T Power TSI Media 2I			1	1	1	1
	Heating Ventilation and Air-Conditioning (HVAC)	Baler	SFLU	RS1	RS2	RS3	RS4
16	ICE ECUDA150ACH180AKBRU-A2-216-VAR	3	3				
17	MARVAIR AVPA30ACH060CKRU-A5-200-VAR	3	3				
18	MARVAIR AVPA72ACA			2	2	2	2
	Fire Suppression System	Baler	SFLU	RS1	RS2		
19	Fike SHP Pro Control System	1	1				
20	FM-200 Agent: 100 lbs. cylinder	1	1				
21	FM-200 Agent: 596 lbs. cylinder	1	1				
22	FM-200 Agent: 73 lbs. cylinder	1	1				
23	VESDA Air Sampling Unit	1	1				
24	Smoke Detectors	11	11				
25	Watermist System	1	1				
26	Fike CHEETAH Xi Control Panel			1	1	1	1
27	FM-200 Agent: 60 lbs. cylinder			1	1	1	1
28	VESDA Air Sampling Unit			1	1	1	1
29	Smoke Detectors			2	2	2	2
	Building Management System (BMS)	Baler	SFLU	RS1	RS2	RS3	RS4
30	DCPS Controller: GE Galaxy Millennium Controller	2	2				
31	DCPS Controller: GE Galaxy Pulsar Controller			2	2	2	2
32	Battery Thermal Probe (BTP): PLC Group THS	2	2	2	2	2	2
33	HVAC Controller: PLC Group TCU800-ET	3	3	1	1	1	1
34	Hydrogen Detector (HD): SBS NTN Sensors	1	1	1	1	1	1
35	Generator Controller (GEN): DSE 4510	2	2				
36	Generator Controller (GEN): DSE 7410			2	2	2	2
37	Liquid on floor detector (LD): Kele WD-2-T-10	2	2	2	2	2	2
38	Differential Pressure Sensor (DPS): QY Electronic QP-86C	1	1	1	1	1	1
39	Temperature & Humidity Sensor (THS): PLC Group THS	3	3	1	1	1	1

	Security System	Baler	SFLU	RS1	RS2	RS3	RS4
40	Access Control Server (ACS): Dell PowerEdge R230	1					
41	Access Control Panel (ACP): LifeSafety Power FPO150-2C82D8E4	1	1				
42	Access Control Panel (ACP): LifeSafety Power FPO150-C4D8E2			1	1	1	1
43	Access Door Control (ADC): Siemens SiPass AC5102	1	1	1	1	1	1
44	Reader Interface (ERI): Siemens ADE5300	2	2				
45	Reader Interface (ERI): HID EntryProx reader			1	1	1	1
46	Electric Door Strike for Deadbolt Recapture (ES-1): HES	2	2	1	1	1	1
47	Electric Door Strike for Latchbolt (ES-3): HES	9	9	1	1	1	1
48	Request to Exit Passive Infrared Sensor (RX-1): Bosch	1	1	1	1	1	1
49	Card Reader (CR-1): HID EntryProx reader	1	1	1	1	1	1
50	Power Over Ethernet (POE) Switch: Transition Networks SM24T6DPA	1	1	1	1	1	1
51	Network Video Recorder (NVR): EverFocus EPRO NVR 16	1	1	1	1	1	1
52	IP Camera: EverFocus EHN3260	6	6	1	1	1	1
53	IP Camera with Motion Detector: EverFocus BA-EHD+	3	3	1	1	1	1

C. Emergency Support Services

1. Emergency Support Services

- a.) The Winning Bidder shall provide emergency support services on an as-needed basis.
- b.) The emergency support services shall be Phone-Call support and/or On-Site support.
- c.) The Phone-Call and On-Site support shall be available on a 24-hours basis, weekends, and including legal holidays.
- d.) The emergency support services shall be for the Critical and Major incident/alarm severity level:

Incident/Alarm Severity Level Definition:

- (a) Critical – The System/Service is a non-operative or complete loss of system/service for which no workaround exists. All or some system/service is affected.
- (b) Major – The system/Service does not function as designed or is experiencing significant degradation in the quality of service.
- (c) Minor – Faults that have little or no impact on the daily system operations.

- e.) The emergency Support Services shall cover the following systems.
- 1.) Generator, Automatic Transfer Switches, AC Power System
 - 2.) DC Power System
 - 3.) Uninterruptible Power Supply (UPS) and Inverter System
 - 4.) Heating Ventilation and Air-Conditioning (HVAC) System and Building Management System (BMS).
 - 5.) Fire Detection and Suppression System
- f.) The Winning Bidder shall provide an updated list of contact persons, telephones, and cellphone numbers in case of emergency calls.

2. Repair and Response Time Matrix

The winning Bidder shall consider all interruptions in service as an urgent priority. Expected response and repair time are given in the table below:

SERVICE ITEM	BASIC SUPPORT	
Helpdesk	24 hours x 7 days a week	
Phone Call Support	24 hours x 7 days a week	
Emergency Support Service	24 hours x 7 days a week	
INCIDENT/ALARM SEVERITY LEVEL	CRITICAL	MAJOR
Response Time (After receipt of advice)	Within 3 hours	Within 8 hours
Restoration Time (Excluding travel time)	Within 4 hours	Within 2 calendar days
Progress Update Time (Escalation)	Update every 1 hour	1 update every day
Root Cause Analysis (RCA Report)	Within 2 calendar day after final resolution time	

VI. Project Deliverables

A. Preventive Maintenance Services

The winning bidder shall provide all materials, labor, and equipment needed for the quarterly preventive maintenance of the Luzon-Bypass Infrastructure Facilities.

Note: All materials/supply to be used by the contractor is subject for approval of the end-user

B. Emergency Support Services

The Winning Bidder shall provide emergency support services on an as-needed basis. The emergency service shall be available on a 24-hours basis, weekends, and including legal holidays.

C. Winning Bidder's Responsibilities

1. Provide in advance the names of personnel that will conduct and perform the preventive maintenance services activity. The end-user will process the necessary work permits ahead of the scheduled activity. Advance notice should be communicated for any changes in the names of the personnel on the schedule.

2. Provide recommendations for the schedule of Preventive Maintenance activity.
3. Provide an estimate/quotation of the cost of labor, parts, and materials for all repair services within two (2) days after the check-up.
4. Checking and Servicing of the units shall be done under the supervision of the end-user.
5. Keep intact a complete servicing record of each unit that will be vital for determining the cause of any trouble that might occur.
6. Submit to the end-user the duly accomplished Quarterly Preventive Maintenance Service Report and copies for acknowledgment.
7. Submit to the end-user the duly accomplished Unit Repair Service Report in case of Repair Services and copies for acknowledgment.
8. Minor repairs and adjustments as required in the periodic schedule shall be undertaken at no extra cost to the end-user.
9. Any fault/issues that occurred during the preventive maintenance activity must be rectified/corrected immediately and submit an Incident Report.
10. Regardless of the cause, the Contractor should locate the fault and restore the system as soon as possible.
11. Train on-site the end-users operator on the proper operation and maintenance activities.

D. End-User's Responsibilities

1. Makes the equipment available for a check-up as per schedule. Access permits shall be processed and issued by the end-user in advance to avoid delays.
2. Performs check-up of equipment to include walk-around and ocular inspections of the equipment and devices displayed parameters, power, voltage, current, and line circuits of the operation and maintenance log sheet.
3. Calls the attention of the Contractor on matters that need improvement. Notifies all concerned parties so that systems improvement can be continuously undertaken to correct deficiencies in due time.
4. Provides maintenance schedule for the whole maintenance period/contract. The schedule will be sent to the Winning Bidder. End-User must be notified of any changes in the schedule of the preventive maintenance activity.

E. Reports, Procedures, and Submissions

1. Reports

- a.) The winning bidder shall submit the format of the following report in hardcopy and softcopy (in original editable format) within a week after the receipt of Notice to Proceed (NTP) for approval by the end-user.
 - 1.) Preventive Maintenance Report
 - 2.) Service and Test Report
 - 3.) Incident Report
 - 4.) Photo documentation before, during, and after preventive maintenance and service procedures.
 - 5.) Inspection and Test Procedures
- b.) Using the approved report format, the winning bidder shall submit three (3) copies of the report in hardcopy and a softcopy (in original editable format) to the end-user for approval.

- c.) The winning bidder should take note that the specified number of copies is subject to change depending on the requirements in billing and payment.
- 2. Reports/Documentation submission
 - a.) Submission of quarterly preventive maintenance report within a week after the activity completion.
 - b.) Incident Report, in case of problems encountered within 2 days after the restoration.
 - c.) Service and Test report within 2 days after the restoration/rectification.
 - d.) Photo documentation supporting the above reports.

F. Manpower Work Requirements

1. Manpower

Personnel must be properly trained to use such related equipment and do the troubleshooting and restoration and must be available at a moment's notice.

In order to effectively maintain the Information and Technology Facilities, maintenance personnel at the minimum must include the following below. The maintenance team credentials shall be submitted in the Post Qualification

- a.) One (1) Project Manager
 - 1.) With at least five (5) years' relevant experience in the management of the operation and maintenance of Building Facilities and /or Information and Technology Building Facilities or similar facilities.
- b.) One (1) Project Coordinator
 - 1.) With at least two (2) years' relevant experience in project coordination of the operation and maintenance of Building Facilities and /or Information and Technology Building Facilities or similar facilities/projects.
- c.) Maintenance team. The team shall consist of the following minimum number of personnel with the following qualifications.
 - 1.) One (1) Mechanical or Electrical or Electronics Engineer/Supervisor
 - (a) Mechanical or Electrical or Electronics Engineer with at least three (3) years' relevant experience in the operation and maintenance of Building Facilities and /or Information and Technology Building Facilities or similar facilities.
 - 2.) One (1) Generator and Automatic Transfer Switch (ATS) Technician
 - (a) Trade School Graduate with TESDA National Certification (NC II) or equivalent and with at least three (3) years' relevant experience in Genset and Automatic Transfer Switch (ATS) operation, maintenance, and repair.
 - 3.) One (1) Multi-Skilled Technician
 - (a) Trade School Graduate with TESDA National Certification (NC II) or equivalent and with at least three (3) years relevant experience in operation and maintenance of Building Facilities and /or Information and Technology Building Facilities or similar facilities:
 - 4.) One (1) Ventilation and Air-Conditioning (VAC) Technician

(a) Trade School Graduate with TESDA National Certification (NC II) or equivalent and with at least three (3) years' relevant experience in operation, maintenance, and repair:

2. Personnel Protective Equipment (PPE) and Safety Devices

The Contractor must also provide and ensure that all personnel is wearing proper PPE at all times and use a safety device in their working area to avoid any accident. Personnel should also wear proper uniform and ID at all times.

Site/workplace must have proper warning devices/signage's during restoration/repair.

3. Tools and Equipment

As part of the maintenance activity, all necessary equipment and tools must be available at all times to do the preventive maintenance, repair, and restoration activities for the duration of the contract.

4. Maintenance vehicles and Communication expenses

The Contractor must have a service vehicle in good working condition for the team to mobilize necessary tools and materials that will be used in the maintenance of the Information and Technology facilities in the duration of the contract.

The Contractor shall shoulder all transportation expenses (i.e., fuel, toll fee, registration) and communication expenses for all personnel in the team.

VII. Assumptions of the Project

- A. Written Statement of the contractor, duly signed by their authorized representative that they have at least five (5) years of direct experience on supply and delivery, installation, testing and commissioning and experience in operations and maintenance of Building Facilities and /or Information and Technology Building Facilities.
- B. Project Requirement (project implementation organization chart of the team who will implement the project). The bidder must provide a dedicated team from start until project completion.
- C. Must hold a PCAB License related to Building Facility Maintenance with a minimum of "B" for the last five (5) consecutive years from the date of Bid Opening. (In case of renewal, the bidder must submit PCAB application and Official Receipt)

VIII. Payment Schedule

Preventive Maintenance Services of Luzon Bypass Infrastructure Facilities payment will be made under the following terms:

- A. Quarterly payment upon receipt and approval of reports.

Reports/Documentation for Preventive Maintenance:

- 1. Quarterly submission of preventive maintenance reports.
- 2. Incident Report, in case of problems encountered.
- 3. Photo documentation before, during, and after preventive maintenance procedures.

- B. At the end of the contract (Last Quarter), payment of the remaining balance will be made upon submission of necessary documents as required by DICT.

Reports/Documentation for Preventive Maintenance:

1. Last quarter preventive maintenance reports.
2. Equipment inventory and status reports.
3. Incident Report, in case of problems encountered.
4. Photo documentation before, during, and after preventive maintenance procedures.

IX. Project Cost

Particulars	Qty	ABC
Procurement of Preventive Maintenance Services of the International Cable Landing Stations and Repeater Stations Facilities	1 lot	PHP 7,150,000.00

X. Project Timeframe

Twelve (12) months upon the receipt of Notice to Proceed, renewable subject to the 2016 Revised Implementing Rules and Regulation of Republic Act No. 9184, also known as the Government Procurement Reform Act.