

TERMS OF REFERENCE:

One Year Maintenance of DICT-Fiber Optic Cable (FOC) Network in City of San Fernando, Pampanga

1. BACKGROUND OF THE PROJECT

1.1. General Overview

The DICT-FOC Network in City of San Fernando, Pampanga which has 34 government agencies (approximately 16 km) connected was fully installed last November 2016 to provide high-speed inter-agency connectivity and improve coordination and delivery of public service. The network is currently maintained by the service provider as part of their contract from December 2018 up to March 2020 to ensure efficiency and reliability of the outside plant network and to keep the system running orderly and cost-effectively in all government agencies connected. The maintenance of the network is not limited to the existing FOC (installed underground and aerial) it will also include the connection of additional agencies within the contract as well as the transfer of FOC and ancillaries in the event of relocation.

1.2 Brief Description of the Project

This tender will cover One Year maintenance of the DICT-FOC Network

1.3. ABC of the Project and Fund Source

1.3.1 The ABC of the project is Php 2,000,000.00.

1.3.2 The Fund Source is the Core ICT Infrastructure Management Division.

2. PURPOSE OF THE PROCUREMENT

2.1 Rationale

The main objective of this proposal is to ensure that all the government agencies connected to the FOC Network are operational 24/7 and immediate repairs will be done on the occasion that there is network failure.

This contract will serve as a combination of regular quarterly maintenance activity and per event/service activity between DICT and contractor.

3. SCOPE OF WORK

3.1 The Maintenance includes the following services/activities to be rendered by the Contractor to ensure the continuous operation of the FOC Network:

3.1.1. Conduct quarterly physical inspections and corrections of the network for the coverage area.

3.1.2. All routes covering all active agencies connected must be inspected at least every quarter per year.

- 3.1.3. Conduct preventive maintenance for the cable network once every quarter.
- 3.1.4. Restoration and replacements of damaged and/or stolen fiber optic cable
- 3.1.5. Pole replacement relocation/straightening/erection
- 3.1.6. Repair/restoration of ODF/patch panel including the splicing closure.
- 3.1.7. Repair of broken duct conduit system and other underground facilities
- 3.1.8. Cleaning and dewatering of manholes quarterly.
- 3.1.9. Quarterly assessment and operational condition of all installed equipment (Media Converter, Switch, router and other active devices) that is part of the government network
- 3.1.10. Installation, splicing and testing of fiber optic cable and equipment to additional government agencies that will be connected to the network identified by DICT.
- 3.1.11. Regular update of fiber core assignment record.
- 3.1.12. For new installation, repair, restoration, or transfer of fiber optic cables and equipment, contractors must submit revised as-built plan, test results (OTDR and Optical Loss Testing), material consumption, single line diagram, and other necessary documents.
- 3.1.13. Installation of access points for the provision of free wifi network at agencies connected to our government network
- 3.1.14. Availability within 24 hours of the maintenance team for immediate response in case of network failure.
- 3.1.15. All necessary tools, equipment, vehicles, facilities and materials must be available within 24 hours after issuing of trouble ticket.
- 3.1.16. Cleaning of equipment at all Regional Government Centers at least once every quarter and tree trimming, if necessary.

3.2 Response and Report Time Target

Contractor considers all interruptions in service as urgent priority. Expected response and repair time are given in the table below:

| <i>Hours/Calendar days of Coverage</i> | <i>Response Time</i> | <i>Restoration</i> |
|--|--------------------------------|--|
| | <i>Maximum Time to Respond</i> | <i>Maximum Time to UP the Network</i> |
| <i>24 x 7 x 366 Calendar days Monday to Sunday</i> | <i>24 Hour</i> | <i>48 Hour from the issuance of trouble ticket</i> |

3.3 List of Government Agencies connected in City of San Fernando, Pampanga - Government Network

| No. | Name of Agency |
|-----|--|
| 1 | Bureau of Fisheries and Aquatic Resources |
| 2 | Bureau of Jail Management and Penology |
| 3 | Bureau Of Plant Industry - Plant Quarantine Services |
| 4 | Bureau of the Treasury |
| 5 | Cooperative Development Authority |
| 6 | Commission on Higher Education |
| 7 | Commission of Human Rights |
| 8 | Commission on Audit |
| 9 | Civil Service Commission |
| 10 | Department of Budget and Management |
| 11 | Department of Environment and Natural Resources |
| 12 | Department of Education |
| 13 | Department of the Interior and Local Government |
| 14 | Department of Health |
| 15 | Department of Labor and Employment |
| 16 | Department of Science and Technology |
| 17 | Department of Social and Welfare Development |
| 18 | Department of Trade and Industry |
| 19 | Land Bank of the Philippines |
| 20 | Land Transportation Franchising and Regulatory Board |
| 21 | Land Transportation Office |
| 22 | National Police Commission |

| | |
|----|--|
| 23 | National Economic and Development Authority |
| 24 | National Meat Inspection Services |
| 25 | National Telecommunications Commission |
| 26 | Office of Civil Defense |
| 27 | Philippine Atmospheric, Geophysical and Astronomical Services Administration |
| 28 | Philippine Drug Enforcement Agency |
| 29 | Commission on Population |
| 30 | Philippine Postal Corporation |
| 31 | Philippine Statistics Authority |
| 32 | Social Security System |
| 33 | Technical Education and Skills Development Authority |
| 34 | Regional Blood Center |
| 35 | Additional 12 agencies to be integrated to our existing facilities |

4. DELIVERABLES

4.1. Bundled Activities for the maintenance service contract

4.1.1. Quarterly Maintenance of Fiber Optic Facilities (QMFOF) which include the following:

- a. Conduct quarterly physical inspections, cleaning of fiber equipment, and corrections of the network
- b. conduct preventive maintenance of the network
- c. Re-tensioning of sagging FOC and guying
- d. Cleaning and dewatering of Manholes
- e. Tree trimming (If necessary)
- f. Maintenance report (Kindly refer to section 4.2)
- g. Trouble ticket assessment: FOC Testing Activity (OTDR, Power Rating, VSL, FOC inventory, Results Documentation), and splicing of patch cords at ODF and PoPs and other activities necessary to the optimal operations of the FOC.

Cost per quarterly activity: Php 120,000.00

4.1.2. Major fiber optic outages (FOO) including pole/s that would need replacement, rehabilitation or restoration which include some or all the following:

- a. Site survey and damage assessment
- b. Installation & Splicing of Distribution Points (setting –up, installation of bridle ring, DP, closing splice, & installation of cable tie)
- c. FOC cabling or releasing of Cable (unlashing of cable, installation of lashing wire, cable lashing clamp, tie-cable support and accessories)
- d. Splicing of Fiber optic cable
- e. FOC Testing Activity (OTDR, Power Rating, VSL, FOC inventory, Results Documentation)
- f. Setting of Poles (Digging, pavement breaking, setting of poles, backfilling & Restoration)
- g. and other activities necessary for the complete restoration and operation of the FOC

Cost per activity or event: P 70,000.00

4.1.3. Transfer of fiber optic equipment (TFOE) per request of agencies connected and Installation of access points for the provision of free wifi for all which include some or all the following:

- a. Boring of holes in walls, ceilings, etc.
- b. Cabling of UTP outdoor cable in ceilings, walls, etc.
- c. Installation of flexible hose, plastic moldings, and GI pipes, if needed.
- d. Provision of electrical source which include electrical wiring and power outlets as needed
- e. Transferring of FOC, ODF, AP's and other equipment for the optimal operation of the network

Cost per activity: P 15,000.00

4.1.4. Installation of new fiber optic facilities (INFOF) and equipment to new agencies that will include the following:

- a. Fiber optic cabling and termination (Splicing of fiber cores)
- b. ODF Installation and Splicing/Termination
- c. FOC Testing Activity (OTDR, Power Rating, VSL, FOC inventory, Results Documentation)
- d. Boring of holes in walls, ceilings, etc.
- e. Installation of flexible hose, plastic moldings, and GI pipes, if needed.
- f. Provision of electrical source which include electrical wiring and power outlets as needed
- h. Setting of Poles (Digging, pavement breaking, setting of poles, backfilling & Restoration)

- g. Installation of Access Points and other activities necessary to the optimal operations of the FOC

Cost per activity: P 45,000.00

Note: The price of pole in 4.1.2. (f) and 4.1.4. (h) is excluded from the cost per activity.

4.2. Reports, Specification, Practices and Procedures

The following Reports, Specifications, Practices and Procedures shall be prepared by the Contractor, called as the "Technical Documents" in this paragraph, to be approved by DICT. These reports should be submitted along with the quarterly billing statement.

4.2.1. Inspection and Acceptance Test procedures, for outside plant system and Optical Fiber Cable Systems.

4.2.2. Restoration/Maintenance procedures

4.1.4.1 Submission of material usage and material inventory

4.2.3. Reports/Documentation for Maintenance

4.2.3.1. Quarterly submission of maintenance report.

4.2.3.2. Incident Report, in case of problems encountered.

4.2.3.3. Repair and Test report after restoration activities.

4.2.3.4. Revised/updated as-built plan/drawing and Single line diagram

Note: The Contractor shall submit to DICT the specified numbers of original and of copies of all the technical documents both in hardcopy and softcopy(in original editable format) including all revised as-built plans and drawings involved in the project.

4.3. Manpower Work Requirements

Contractor will supply the needed manpower capable of delivering the needed services on a moment's notice. Manpower should be highly technically trained not only in fiber optic technology but also knowledgeable in networking and are capable of troubleshooting and restoration activities.

In addition, team lead should have good moral character and can easily communicate with DICT's stakeholders.

Any untoward incidents and/or accidents that may happen to contractor's manpower or any third party shall be the sole responsibilities of the contractor.

Kindly see ANNEX B for the detailed list of manpower requirements.

4.4. Tools and Equipment

The contractor should make available the following equipment, facilities, and tools in order to perform the preventive maintenance and restoration of the FOC Network. (Not to be delivered to DICT)_{(d2]}

| # | Description | Quantity | Unit |
|----|---|----------|------|
| 1 | *Arc Fusion Machine and necessary tools (fiber cleaver, cutter, stripper, etc.) | 1 | set |
| 2 | *Optical Time Domain Reflectometer | 1 | set |
| 3 | *Optical Loss Test Set (Power Meter & Light Source) | 1 | set |
| 4 | Fiber Extension Ladder 28 feet length | 2 | pcs. |
| 5 | Fiber Extension Ladder 24 feet length | 2 | pcs. |
| 6 | Lineman PPE's (Safety belt, Safety shoes, etc.) | 4 | sets |
| 7 | Lineman tool kit | 4 | sets |
| 8 | Cable jack/trailer | 1 | set |
| 9 | Digging bar, shovel, clamshell digger | 2 | sets |
| 10 | Carpentry tools | 2 | sets |
| 11 | Wheel meter | 2 | pcs. |
| 12 | Cable Cutter | 2 | pcs. |
| 13 | Messenger wire cutter | 2 | pcs |
| 14 | Submersible pump for manhole dewatering | 1 | set |
| 15 | Other necessary tools/equipment | 1 | lot |

*Note: *shall have updated Calibration Certificate.*

4.5. Warehouse

All needed supplies and materials will be available for pickup at DICT's warehouse in Dau, Mabalacat City, Pampanga. All issued supplies and materials shall be accounted for by the contractor in the after-activity report.

Note: In case of any loss or damages on the materials provided by DICT, the Contractor will be accountable and must immediately replace the said materials.

4.6. Maintenance Vehicles

Contractor must have a service vehicle/s to mobilize necessary tools and materials that will be used in the maintenance of the network in the duration of the contract. (Not to be delivered to DICT)^(D3)

One (1) Service Vehicle consists of:

- Van or Pick-up
- Ladder rack holder on top
- Storage for tools and materials

One (1) Boom Truck

4.7. Service Level Agreement

Quarterly maintenance shall be at the 1st week of the start of the quarter and should be completed within 10 working days.

Response to the trouble ticket should be within 24 hours after its issuance. Full restoration should be done within 48 hours after issuance of the Trouble ticket. Extension of services to new agencies and/or transfer should be done within 5 working days after issuance of request.

DICT is entitled to rebates on billing if activities exceed the allotted time frame in 3.2 after the issuance of the trouble ticket.

| Cumulative Downtime Exceeding Time Allotted in Hours | Rebates (% of Fee) | Cumulative Downtime Exceeding Time Allotted in Hours | Rebates (% of Fee) |
|---|---------------------------|---|---------------------------|
| 0-24 | 5% | 241-264 | 55% |
| 25-48 | 10% | 265-288 | 60% |
| 49-72 | 15% | 289-312 | 65% |
| 73-96 | 20% | 313-336 | 70% |
| 97-120 | 25% | 337-360 | 75% |
| 121-144 | 30% | 361-384 | 80% |
| 145-168 | 35% | 385-408 | 85% |

| | | | |
|---------|-----|---------------|------|
| 169-192 | 40% | 409-432 | 90% |
| 193-216 | 45% | 433-456 | 95% |
| 217-240 | 50% | 457 and above | 100% |

4.8.1. Service Level Agreement Exclusion

Exclusions include but are not limited to the following

- 4.8.1.1. Parties agreed-to-schedule restoration on a specific date and time.
- 4.8.1.2. Downtime caused by failures of components, third-party systems or services that are not supplied or part of the service provider service coverage.
- 4.8.1.3. Any availability or outage impact related to DICT side security breaches or compromised serviced credentials
- 4.8.1.4. Downtime associated with improper use of the services (credentials, call sequence, and method formats);
- 4.8.1.5. Suspension or termination of services by DICT;
- 4.8.1.6. Any service outage due to Force Majeure.

5. TESTING AND ACCEPTANCE

The contractor is responsible for the performance of the entire cable network. This will include the fiber and splice /connector loss in the cable system after it has been installed.

Splice acceptance tests (*individual splice insertion losses*) shall not be above 0.1dB for fusion splices while connectors shall have insertion losses of 0.5 dB or less.

*Note: All test equipment that will be utilized for this project shall have updated **calibration certificates** to ensure accuracy of results. Contractor is required to submit Calibration Certificates prior to testing.*

6. CHANGE MANAGEMENT PROCEDURE

In case an agency transfers to a different location/site, the Contractor is required to connect said agency to the FOC Network provided that the location of the agency is not beyond 1000 meters from the network.

7. EVALUATION PROCESS

Contractors must submit the following not more than five (5) calendar days after the declaration of LCB or SCB:

7.1. Written Statement of the contractor signed by their authorized representative that they have at least 5 years of direct experience in planning, engineering, supply and delivery, installation, testing and commissioning and experience in operations and maintenance of optical fiber distribution and transmission projects/systems.

7.2. Contractor shall submit receipt and proof of projects.

7.3. Contractor shall submit the resume of key personnel to be assigned to the project. These key personnel are the; PECE, Project Manager/Engineer, Project Coordinator and Outside Plant Supervisor.

7.4. Must hold a PCAB License of contractor for Communications Facilities for the last five (5) consecutive years from the date of Bid Opening.

8. DURATION OF THE CONTRACT

8.1. The duration of the contract is one (1) year for the maintenance of the FOC network after the Notice to proceed is given.

8.2. Upon any violation of the agreement the DICT has the right to terminate the contract anytime.

9. ASSUMPTION OF THE PROJECT

9.1. The FOC network will experience two (2) outages/trouble needing repair per quarter.

9.2. Four (4) agencies per quarter will be needing adjustment, upgrade and/or transfer of their internal networking facilities and/or add Free WIFI facilities for their clients

9.3. Four (4) new agencies per quarter will be added to the government network that will need new FOC facilities and equipment thereby extending the GovNet.

10. PAYMENT TERMS / PROGRESS PAYMENT

10.1. Payment would be made within the quarter after the necessary documents including billing has been submitted.

10.2. In case of non-availability of urgently needed supplies and materials, the contractor may provide the needed supplies with a reasonable cost and will be billed at the end of the quarter.

Note: The contractor would also need to submit three quotation forms from different suppliers and select the lowest quotation given.

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ANNEX A

Sample of Bundled Price Cost

| ITEM DESCRIPTION | QUANTITY | UNIT COST (in PhP) | TOTAL COST (in PhP) |
|--|----------|--------------------------|---------------------------|
| a) Quarterly Maintenance of Fiber Optic Facilities(QMFOF) | 4 lot | 120,000.00 | 480,000.00 |
| b) Fiber optic outages that would need repair, rehabilitation or restoration (FOO) | 8 lot | 70,000.00 | 560,000.00 |
| c) Transfer of fiber optic equipment per request of agencies connected and Installation of access points for the provision of free wifi for all (TFOE) | 16 lot | 15,000.00 | 240,000.00 |
| d) Installation of new fiber optic facilities and equipment to new agencies (INFOF) | 16 lot | 45,000.00 | 720,000.00 |
| TOTAL | | 2,000,000.00 | |
| AMOUNT IN WORDS | | TWO MILLION PESOS | |

ANNEX B

4.3.1. Manpower

In order to effectively maintain the FOC Network, maintenance personnel, at the minimum, must include the following:

4.3.1.1. One (1) Project Coordinator

- He/she serves as the focal person/team lead of the project and at the same, responsible for the inventory of maintenance materials.

4.3.1.2. One (1) OSP Supervisor

- Skilled in Fiber optic cable installation with an understanding in engineering drawings
- Knowledge of construction practices for Outside Plant placement

4.3.1.3. One (1) Lineman

- a good working knowledge of telecommunications construction;
- familiarity with aerial lift devices, utility lines and poles, and the functionality of each;
- ability to use cable placement equipment and tools;

4.3.1.4. One (1) Splicers/Commissioning personnel

- Skilled in fiber optic splicing and testing with an understanding in engineering and splicing drawings. He/she should also have knowledge of construction practices for outside plant cable placement, sufficient experience with computers and have a background in fiber optic splicing and testing documentation practices.

4.3.1.5. One (1) Support personnel

- Basic knowledge in telecommunications facilities
- Must have experience in outside plant installation and constructions

The Fiber Optic Cable Technicians plays a vital role in ensuring quality and timely deliveries of our fiber services along with additional services to customers. Skilled in fiber optic splicing with an understanding in engineering and splicing drawings.

Responsibilities include:

- Prepping and fusion or mechanical splice SM and occasionally MM fiber optic cables, in both outdoor and indoor settings
- Constructs proper splice cases pressurized and non-pressurized, using all types and sizes of cable, including but not limited to: grounding, bonding, isolation, slack storage and sealing
- Able to place a mid-sheath splice
- Work with Construction PM's and/or OSP Engineers to perform splicing as directed

- Testing and troubleshooting fiber using an OTDR, optical power meter, fiber identifier and scope
- Provide the OSP Engineers with detailed reports of field splicing activity
- Work flexible hours, after hours work which would include nights and weekends
- Strong communication skills are absolutely essential as is a cooperative attitude toward co-workers and third party vendors
- Maintain a positive attitude and strong work ethic that can provide high productivity with minimal supervision.
- On call rotation responding and restoring services for emergency calls, responsible for being on the job at short notice to repair damaged cables until service is restored.
- Reviews and interprets underground and aerial cable records in existing records, on maps or in the field
- Makes precise recommendations for changes in running fiber optic cables, or provides input into construction methodologies
- Participates in engineering, permit and construction processes
- Perform all work as necessary to conform to quality control guidelines (includes compliance with requirements outlined in applicable regulations such as: OSHA, FCC, NESC and NEC, etc.; as well as following procedures as outlined in the Installation, Technical Operations, and Safety Manuals, and Employee Handbook)
- Clean, maintain, stock, and secure assigned vehicle and equipment
- Perform other duties as requested by supervisor

Qualifications and Work Environment:

- Ability to adhere to Local, Federal regulations and Company policies
- Proficient with construction equipment, hand tools, fusion splicer, OTDR, fiber identifiers and scope
- Ability to carry, climb and operate extension ladder, (approx. 28 ft. high and 75 pounds)
- Ability to lift and move up to 100 pounds
- Ability to climb poles using gaffs and climbing belt as needed
- Ability to drive company vehicles in a safe and responsible manner and operate hydraulic aerial lifts
- Ability to perform job from high places (i.e. poles and roofs)
- Specific vision abilities required by this job include close vision, distance vision, color vision, peripheral vision, depth perceptions and the ability to adjust focus
- High school Diploma or equivalent/Some college preferred
- Must have good verbal and written communication skills.
- Must have good organizational skills with the ability to prioritize and organize effectively
- Ability to interact effectively with other team members.
- Basic understanding of Microsoft Outlook, Excel and word.
- Must be able to work independently without supervision
- Valid professional driver's license, auto insurance, with a satisfactory driving record
- Work indoors in poorly ventilated areas such as attics during extreme heat
- Exposure to dust, dirt, noise, insects, cleaning solutions

- Work outdoors in all kinds of weather and at all times of the day or night
- Work performed near power lines and electricity
- Work and travel in inclement weather

4.3.2. Personnel Protective Equipment (PPE) and Safety Devices

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