

PROJECT TERMS OF REFERENCE

Procurement of Outside Plant (OSP) Maintenance and Repair Services with Framework for DICT's Luzon Bypass Infrastructure.

I. GENERAL INFORMATION

- **Project Title:** Procurement of OSP Maintenance and Repair Services with Framework for DICT's Luzon Bypass Fiber Optic Network Infrastructure
- **Project Sites:** Luzon Bypass Infrastructure routes traversing La Union, Pangasinan, Nueva Ecija and Aurora.
- **Target Beneficiaries:** The General Public Nationwide, National and Local Government Offices, Public Places
- **Proponent:** National Broadband Program (NBP)
- **Project Timeframe:** Yearly Contract
- **Estimated Project Cost:** PhP13,700,000.00

II. EXECUTIVE SUMMARY

The DICT-Duct Facility and FOC Network in the Luzon Bypass (Annex A) was installed to provide and maintain the high-speed link from Baler, Aurora CLS to San Fernando, La Union CLS as per the Landing Party Agreement (LPA). Maintenance of these OSP facilities is needed to ensure efficiency and reliability of the network and to keep equipment and system running as per design specifications.

III. OBJECTIVE

The main objective of this procurement is to ensure that DICT- Luzon Bypass Fiber Optic Network is operational 24/7 and immediate restoration/repair on the occasion that there is fiber network degradation and/or failure, including power cable.

The Project will secure services for the maintenance of the following OSP facilities:

- Front-haul: Beach manhole to Cable Landing Station(CLS) with a total of 6 kilometers fiber optics, 3run-4 inches HDPE pipe, 33 manholes, and beach manholes, including power cable (8-15 KV-DC)
- Terrestrial: Baler CLS to SFLU CLS with a total of 240.2 kilometers fiber optics, 2-ducts (7-way micro-duct and 40mm HDPE), combination of underground, trench and bridge attachment, 315 pcs. (manholes, service box and access box).

The winning bidder will supply labor and necessary materials needed in the maintenance of the network or otherwise provided by DICT.

IV. SCOPE OF THE PROJECT

Maintenance and repair services includes the following services/activities to be rendered by the Contractor to ensure the continuous operation of the DICT- Luzon Bypass Fiber Optic Network.

A. Detailed Scope of Works for Maintenance

1. All FOC routes under Luzon Bypass Fiber Optic Network shall be patrolled daily. Special cases, such as construction near the network routes and sites, will require daily visits to monitor 3rd party activities, ensure that there is no risk to the network, and to prevent any cable cuts. The patrolling activity shall be summarized in weekly patrolling report and submit it to DICT including update of all construction near the duct facilities.
2. In the event that the contractor detects, or has been made aware, that a third party is working or intends to work close to DICT-Duct Facility and FOC Network, contractor shall but not limited to;
 - (a) Inform DICT as soon as possible. DICT will be the one coordinating this to local government authority for appropriate action.
 - (b) Duly fill warning letter form, get it signed by the 3rd party/project owner and submit to DICT.
 - (c) Document the third party name, route under risk, date/time, and expected action to take.
 - (d) If the 3rd party has all permission, locate the cable route, monitor the 3rd party activities to ensure that there is no risk to DICT network and to prevent any cable/duct cut or damage.
3. Report of damaged DICT facilities for the Luzon By-pass fiber network.
4. Follow up on all cut cases up to permanent repair and settlement is completed with third party/project owners.
5. Contractor shall execute proper and advance coordination with DICT for DICT to timely facilitate the needed permits from the government authorities and municipalities for them to carry out the preventive maintenance service.
6. Conduct cleaning and dewatering of manholes/service box at least twice (2) a year.
7. Sealing of vacant and occupied pipes with end cap/plug and simplex duct plug respectively.
8. Check and replace missing end caps, connectors (micro-duct).
9. Perform monthly link attenuation test on all dark fibers from ODF to ODF between Cable Landing Station to Relay Station and Relay Station to Relay Station to check if span loss is within acceptable limits.
10. Contractor should submit a Traffic Management Plan for every scheduled activity along the Luzon By-pass fiber network.
11. Submit weekly, monthly and quarterly reports as Key Performance Indicator (KPI).

B. Repair Services through Framework Agreement

1. Detailed Scope of Works

- (a) Secure 24/7 on-call/standby repair team for immediate response in case of network failure.
- (b) Regardless of the cause, contractor; should find out the fault, cut or damage location and splice the working fibers (and High-Voltage power cable if fault is in the fronthaul) to restore the traffic as soon as possible. Splicing of the non-functioning fibers and couple the free ducts should be done on the permanent restoration.
- (c) Contractor shall prepare and submit incident report, notice for cable cut/duct damage to DICT.
- (d) Restoration and replacements of damaged and/or stolen fiber optic cables.
- (e) Restoration and replacements of damaged and/or stolen power cables.
- (f) Restoration/Repair of broken duct/conduit system and other underground facilities including bridge attachments.
- (g) Installation of duct/conduit system including existing facility for the re-routing due to road widening and other related works.
- (h) Restoration and repair is not limited to fiber optic network link, but also to OSP facilities (ex. uplifting of manhole frame and cover, manhole repair).
- (i) Installation of aerial cable including all accessories, if necessary (for temporary restoration).
- (j) Pole installation including all accessories, if necessary (for temporary restoration).
- (k) For repair and restoration of fiber optic cable, contractor must submit revised as-built plan (in PDF format and printed in A3 paper), test results (OTDR before and after and Optical Loss Testing), material consumption and other necessary documents.
- (l) The contractor and/or DICT shall provide the respective materials for any corrective maintenance services to be performed by the contractor. The contractor shall provide all needed spare materials identified in the DICT approved Framework Agreement List.
- (m) Secure own warehouse for safe-keeping of spare materials and equipment.
- (n) Contractor should have a Traffic Management Plan in place during restoration/repair activity along the Luzon By-pass fiber network.
- (o) Contractor shall provide a three (3) months warranty from the date of permanent restoration during which time the Contractor shall remedy, free of charge, any failure, repair or restoration.
- (p) Contractor must be in constant coordination to DICT from start to finish during restoration/repair and document everything for submission to DICT.

- (q) Contractor shall execute proper and advance coordination with DICT for DICT to timely facilitate the needed permits from the government authorities and municipalities for them to carry out any restoration/repair works.

2. Definition of Terms

- (a) **Call-Off.** Refers to a specific procurement request or order made by the procuring entity exercising the option and requiring a supplier or service provider to deliver the goods or render the services agreed upon under the terms of the Framework Agreement.
- (b) **Call for Mini Competition.** Refers to a written request from the procuring entity inviting all parties to a multi-year Framework Agreement to submit their best price proposal for items or services subject of Mini Competition.
- (c) **Framework Agreement.** Refers to a written agreement between a procuring entity and a supplier or service provider that identifies the terms and conditions, under which specific purchases, otherwise known as “Call-Offs”, are made for the duration of the agreement.
The Framework Agreement is in the nature of an option contract between the procuring entity and the bidder(s) granting the procuring entity the option to either place an order for any of the goods or services identified in the Framework Agreement List or not buy at all, within a minimum period of one (1) year to a maximum period of three (3) years. The Framework Agreement shall have a fixed period of either one (1), two (2) or three (3) year(s).
- (d) **Framework Agreement List.** Refers to the list of goods or services, and their corresponding technical specifications, scope of work, projected quantities, and estimated prices, subject of the Framework Agreement.
This shall be limited to repeatedly required goods or services that are identified to be necessary and desirable, but, by its nature, use, or characteristic, the quantity and/or exact time of need cannot be accurately pre-determined and are not advisable to be carried in stock.
- (e) **Mini Competition.** Refers to the process by which the parties to a multi-year Framework Agreement bid as to their lowest price, prior to the issuance of a Call-Off by the procuring entity.
- (f) **Multi-Year Contracting Authority (MYCA).** Refers to the document issued by the Department of Budget and Management (DBM) either for locally-funded projects or foreign-assisted projects authorizing agencies to undertake the procurement of multi-year projects for the full project cost.
- (g) **Performance Securing Declaration.** The Performance Securing Declaration is an undertaking which states, among others, that the bidder shall guarantee its faithful performance of the obligations under the Framework Agreement and that it will automatically be blacklisted

from being qualified to participate in any government procurement activity for one (1) or two (2) years¹ in the event it violates any of the conditions stated in the Framework Agreement.

3. General Conditions

- 3.1. Procuring entities may use Framework Agreement if the Bids and Awards Committee (BAC) determines that entering in a Framework Agreement is more practical, economical, and advantageous for the procuring entity, based on the study or evaluation conducted by the end-user unit representative showing that:
- 3.1.1 Efficiency in procurement is attained as repetitive conduct of procurement or the occasions of failures of biddings are minimized;
 - 3.1.2 Stockholding or warehousing of goods and the costs and risks accompanying it will be significantly reduced or avoided;
 - 3.1.3 Incurrence of additional cost will be lessened as the possibility of delay in the acquisition of the goods or services is minimized;
 - 3.1.4 The commitment by the supplier or service provider to immediately deliver at short notice will translate to a more efficient means of supplying goods and services;
 - 3.1.5 Procuring entity will benefit from the fixed price or lower price for the duration of the Framework Agreement;
 - 3.1.6 Call-Offs at the time of actual need will result in the optimum usage of the ABC; or
 - 3.1.7 The benefits and advantages of lean and just-in-time procurements are achieved.
- 3.2. The procurement of goods and services under a Framework Agreement shall be conducted following the procedure for competitive bidding provided in RA No. 9184 and its revised IRR, subject to Item 6 of this Guidelines.

4. Procurement Planning

- 4.1. The Framework Agreement List shall be prepared in the most practical and efficient manner that will encourage participation and competition among interested suppliers or service providers in the relevant industry. The Framework Agreement List shall be prepared taking into consideration the following:
- 4.1.1. End-user unit's determination that the goods or services to be included in the Framework Agreement List are necessary and desirable for the operations of the procuring entity, supported by a document establishing the need for the acquisition of the goods in the Framework Agreement List, such as, but not limited to historical data, needs analysis, or market study establishing the Approved Budget for the Contract (ABC) for each of the goods in the Framework Agreement List including budgetary allotments per type of product or service.
 - 4.1.2. The maximum quantity of items or services to be indicated in the Framework Agreement List shall be determined based on the

expected number or outputs to be required by the procuring entity should the need arises. The maximum quantity shall be considered as the maximum quantity allowed to be purchased by the procuring entity, which the supplier or service provider is bound to deliver or perform pursuant to the Call-Off or aggregate of all the Call-offs issued for the purpose.

4.1.3. The Framework Agreement List shall indicate the following information:

4.1.3.1. Type and nature of each item or service;

4.1.3.2. Technical Specifications or Scope of Work;

4.1.3.3. Maximum quantity of items or services;

4.1.3.4. Estimated cost per item or service;

4.1.3.5. Total ABC including budgetary allotments per type of product or service;

4.1.3.6. Expected delivery timeframe after receipt of a Call-Off; and

4.1.3.7. Other appropriate information as may be necessary.

4.1.4. The cost per item or service shall be determined and prepared after careful consideration of variables and factors that may affect future market prices using, whenever applicable, historical data, market study, feasibility study, net present value of money, foreign exchange rate, inflation rate, cost of money, assessment of Total Cost of Ownership, Life Cycle Costing and Value for Money analysis taking into consideration the timeframe and period for the implementation of the Framework Agreement.

4.1.5. Based on the results of market study and procurement planning, the BAC may identify different procurement projects for a given fiscal year that will adopt Framework Agreement as a contractual arrangement. Each procurement project shall have a separate Framework Agreement List as the latter is specific to a particular procurement project.

4.2. No procurement shall be undertaken under this Guidelines unless the same is in accordance with the Annual Procurement Plan (APP) and the Project Procurement Management Plan (PPMP) prepared by the procuring entity. The procuring entity, in the preparation of its APP, shall include procurement projects that will be subjected to Framework Agreements, and attach all Framework Agreement Lists as part of the APP.

4.3. In the event a MYCA or equivalent document is necessary to support a contractual obligation on a multi-year basis, the procuring entity should secure such document from the relevant government authority before commencement of the relevant procurement activity in compliance with applicable law, rules, circulars and issuances.

The issuance of MYCA shall be subject to existing budgeting and auditing rules and regulation.

5. Competitive Bidding

5.1. The procuring entity shall conduct competitive bidding using a single stage, two-envelope procedure as prescribed in Sections 23 and 25 of

RA No. 9184 and its revised IRR. For this purpose, the procuring entity, through its BAC, shall prepare, separate technical specifications or scope of work for every item to be bidded out and indicate, among others, total cost for each item, the maximum quantity it may procure when needed, and the requested delivery or performance lead time from issuance of the Call-Off or from any date determined by the procuring entity.

- 5.2. The Invitation to Bid shall indicate that the procurement will be subject to a Framework Agreement pursuant to this Guidelines, and shall state whether the Framework Agreement is for a single or multi-year Framework Agreement.
- 5.3. For multi-year Framework Agreement, the ABC for the first year shall be the basis in computing for the required amount of the single largest completed contract, net financial contracting capacity, bid security, bidding documents fee and protest fee.
- 5.4. The procedure and requirements for Competitive Bidding provided in RA No. 9184 and its revised IRR shall apply while the Lowest Calculated and Responsive Bidder (LCRB) shall be determined as follows:
 - 5.4.1. **For single-year Framework Agreement.** If the Framework Agreement is for a duration of one (1) year, outright determination of the LCRB shall be conducted by the BAC and the recommendation to enter into a Framework Agreement with the LCRB shall be submitted to the HoPE. Upon receipt of the BAC recommendation, the HoPE shall award the option contract in the form of a Notice to Execute Framework Agreement to the bidder with the LCRB. This notwithstanding, actual purchase of the procuring entity shall only be made upon issuance of Call-Off;
 - 5.4.2. **For multi-year Framework Agreement.** When the Framework Agreement is for a duration of two (2) to three (3) years, the bidders shall make initial submission of their eligibility requirements and financial bid offer and the BAC shall make an initial determination of the eligibility and the compliance of bidders with the technical and financial aspects of the project. The BAC shall then recommend the execution of a Framework Agreement among the eligible, technically and financially compliant bidders and the procuring entity. The HoPE shall then issue a Notice to Execute a Framework Agreement to all complying bidders. The determination of the LCRB shall not be performed by the BAC until a Mini-Competition is conducted among the bidders which were earlier determined to be eligible and compliant with the technical and financial aspects of the project. When Call for Mini-Competition is made, the BAC shall allow the bidders to submit their best financial proposals on such pre-scheduled date, time and place, to determine the bidder with the LCRB; and
 - 5.4.3. **Single Calculated and Responsive Bid (SCRB).** A SCRБ shall be considered for award in accordance with Section 36 of the 2016 revised IRR of RA No. 9184; however, if the procurement is for a multi-year framework agreement and only one (1) passed the preliminary examination or evaluation, the multi-year

Framework Agreement shall be converted to a single-year Framework Agreement.

- 5.5. Prices quoted by the bidder must be within the total cost per item as provided in the Framework Agreement List. Financial bid offer that provides price quotations that exceeds the total cost per item shall be automatically disqualified.

6. Framework Agreement

- 6.1. Within ten (10) calendar days from receipt by the participating bidder(s) of the Notification to Execute a Framework Agreement with the procuring entity, the bidder or its duly authorized representative shall formally enter into a Framework Agreement with the procuring entity for an amount of One Peso (Php 1.00) to be paid by the procuring entity as a consideration for the option granted to the procuring entity to procure the items in the Framework Agreement List when the need arises.
- 6.2. Framework Agreements shall include the following: (a) Framework Agreement List; (b) a provision that the perfection of the actual procurement contract shall be reckoned from the execution of the Call-Offs; and (c) statement that upon the execution of the Call-Offs, all rules and guidelines governing implementation of procurement contracts under RA No. 9184 and its revised IRR shall be applicable.
- 6.3. Prices indicated in the Framework Agreement corresponding to the subject goods or services in the Framework Agreement List shall be fixed price per item or identified service. For a single-year Framework Agreement, the price shall be based on the actual bid price of the bidder, while for a multi-year Framework Agreement, it shall be based on the price offered in the Mini-Competition.
- 6.4. Framework Agreements shall not state or imply any agreement by the procuring entity to place future contracts or make orders with the supplier or service provider.
- 6.5. No modification of the Framework Agreement during its period shall be allowed.
- 6.6. Framework Agreements shall be valid only for the period stated in the bidding documents which, shall not exceed three (3) years from the time the Framework Agreement was entered into and executed by the parties, and shall not be extended beyond its lifetime.
- 6.7. To guarantee the faithful performance by the supplier or service provider of its obligations under the Framework Agreement, it shall submit a performance security in accordance with Section 39 of the revised IRR of RA No. 9184 or a Performance Securing Declaration as defined under this Guidelines prior to the signing of the Framework Agreement.
- 6.8. The basis for the computation of the performance security shall be the total contract price whether the procurement is for a single or multi-year framework agreement.
- 6.9. Notwithstanding the eligibility of a bidder, the BAC reserves the right to review the qualifications of the supplier or service provider. If there has been any change in the capability of the supplier or service provider to undertake its obligations under the framework agreement so that if it

fails the eligibility criteria set thereon, the procuring entity shall consider the said supplier or service provider as ineligible and shall disqualify it from obtaining any award or contract.

- 6.10. Bidders executing the Framework Agreement either for single or multi-year shall ensure the continuing validity of their eligibility documents during the implementation of the contract.

7. Call-Off

- 7.1. When the procuring entity has determined that an item or service covered in the Framework Agreement is needed, it shall require the delivery of the item or rendition of the service identified in the Framework Agreement List in such quantity or scope and at the price for which it was awarded by executing a Call-Off.
- 7.2. For a single-year Framework Agreement, Call-off may be executed and issued to the winning supplier or service provider immediately upon determination that an item or service is needed.
- 7.3. For a multi-year Framework Agreement, Call-off shall be issued after conduct of mini competition in favor of the supplier or service provider that provided the lowest calculated and responsive bid.
- 7.4. The BAC may execute as many Call-Offs for the same item as may be needed within the period of the Framework Agreement as long as the total quantity for all Call-Offs do not exceed the maximum quantity in the Framework Agreement List and the aggregate amount of all executed Call-Offs do not exceed the total contract price specified in the Framework Agreement.
- 7.5. The succeeding Call-Offs shall have the same unit price based on the financial bid offer in case of single-year Framework Agreement. For multi-year Framework Agreement with multiple qualified bidders, the price depends on the result of each Mini-Competition but not to exceed the price submitted during the initial submission of the bidders' financial bid as provided in Section 5.4.2 of this Guidelines.
- 7.6. The BAC may execute Call-Offs requiring delivery to multiple destinations or performance at multiple locations.
- 7.7. For purposes of participation in other public bidding activities, the aggregate of the Call-Offs for a particular item or similar items satisfactorily completed by the supplier or service provider shall be considered as one (1) completed contract with the cumulative amount thereof as the total contract amount. In such case, the date appearing in the Certificate of Acceptance issued by the procuring entity for the last delivery will be considered as the date of completion of the contract. On the other hand, only those undelivered items in the Call-Offs executed by the procuring entity shall be included in the Statement of All Ongoing Government and Private Contracts for purposes of participating in other bidding activities.
- 7.8. For purposes of the Certificate of Availability of Funds requirement, it shall be issued only every Call-Off subject to existing auditing and budgeting rules and regulations.

8. Implementation and Termination Framework Agreements

- 8.1. After receipt by the supplier or service provider of the Call-Off from the procuring entity, it shall deliver or perform the items within the period specified in the Framework Agreement, unless a different time is provided in the Call-Off.
- 8.2. Any extension of time for the delivery or performance shall be made in writing and prior to the date of deliver or performance indicated in the Framework Agreement or Call-Off and subject to prior approval by the procuring entity after consideration of reasonable and justifiable causes.
- 8.3. If the supplier or service provider fails to deliver or perform within the agreed period, including any time extension, it shall be liable to the procuring entity for liquidated damages of at least equal to one-tenth of one percent (.001) of the cost of the unperformed portion of the total amount of the items ordered per Call-Off for every day of delay.
- 8.4. Once the cumulative amount of liquidated damages reaches ten percent (10%) of the total amount of the items ordered per Call-Off, the procuring entity may rescind the same, without prejudice to other courses of action and remedies open to it.
- 8.5. The Warranty provision for goods under Section 62 of RA No. 9184 and its revised IRR shall be observed under the Framework Agreement, and shall be required for each Call-Off.
- 8.6. Without prejudice to the provisions of applicable laws, rules, and guidelines, the Framework Agreement shall automatically terminate under any of the following conditions:
 - 8.6.1. When the total maximum quantity specified in the Framework Agreement has been exhausted; or
 - 8.6.2. When the specified duration of the Framework Agreement has expired.
- 8.7. All other rules governing contract implementation and termination under RA No. 9184, its revised IRR, and relevant procurement policies shall be applicable.

9. Repeat Order

- 9.1. No Repeat Order for an item in the Framework Agreement List shall be allowed until after the procuring entity has exhausted the maximum quantity for the same item specified therein or after the Framework Agreement has expired, whichever comes first and subject to the conditions provided in Section 51 of RA No. 9184 and its revised IRR. For this purpose, the Repeat Order may only be availed of within six (6) months from the date of the last or final Call-Off for a specific item where the maximum quantity has been exhausted or from the expiration of the Framework Agreement.
- 9.2. In case Repeat Order is allowed and resorted to, the twenty-five percent (25%) maximum allowable quantity shall be based on the aggregate quantity of actual items ordered and delivered.

10. Framework Agreement List

FRAMEWORK AGREEMENT LIST <i>(Department of Information and Communications Technology)</i>				
	Item / Service Type and nature of each item/service	Cost per item or service	Maximum Quantity	Total Cost per Item
1	Installation 144 core, FOC, Fiber Blowing Cable Single Mode (144-c fiber to be provided by DICT)	₱102.86/meter	1000	₱102,860.00
2	(12)core, Installation FOC, Client use (Labor & Materials)	₱180.00/meter	350	₱63,000.00
3	Installation 48 core, FOC, Aerial Self Support Single Mode (Labor & Materials)	₱225.07/meter	1000	₱225,070.00
4	HDD-Installation Micro-duct (7-way) 16/12mm (including microduct tube connection and microduct joint E/E pit, Micro-duct provided by DICT)	₱5,009.29/meter	250	₱1,252,322.50
5	HDD-Installation HDPE pipes (including connectors): -4 inch dia -40mm dia (40mm HDPE provided by DICT)	₱9,189.29/meter ₱5,446.93/meter	100 100	₱918,029.00 ₱544,693.00
6	Trench-Installation Micro-duct (7-way) 16/12mm (including microduct tube connection and microduct joint E/E pit) (micro-duct will be provided by DICT)	₱3,785/meter	100	₱378,500.00
7	Trench-Installation HDPE pipes (including connectors): -4 inch dia -40mm dia (40mm HDPE provided by DICT)	₱10,897.03/meter ₱6,817.01/meter	50 50	₱544,851.50 ₱340,850.50
8	Installation of pole line and hardware	₱7,918.57/pole	8	₱63,348.56
9	Installation of concrete pole (with pole line & hardware)	₱27,199.29/piece	8	₱217,594.32
10	Splicing of fiber including Fiber Closure installation (includes testing of fiber before and after)	₱3,271.07/core	288	₱942,086.16
11	Bridge attachment installation (includes labor & materials)	₱7,367.50/meter	1	₱7,367.50
12	Uplifting of manhole frame and cover (including braking and restoration)	₱61,221.43/piece	1	₱61,221.43
13	Manhole Cleaning and Dewatering	₱4,750.00/piece	6	₱28,500.00
14	Manhole painting	₱8,035.72/piece	6	₱48,214.32

15	Manhole cover and frame replacement (labor only)	₱30,000.00/piece	2	₱60,000.00
			Total	₱5,798,490.79
TOTAL (Approved Budget for the Contract)				₱5,800,000.00
<i>Expected delivery timeframe after receipt of a Call-Off.</i>		<i>Within [no. of days] calendar days upon issuance of Call-off .</i>		
<i>Remarks</i>		<i>Indicate here any other appropriate information as may be necessary.</i>		
SIGNATURE OVER PRINTED NAME		POSITION	DEPARTMENT/DIVISION	

11. 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/Days Coverage</i>	<i>Level Type of Restoration</i>	<i>Response Time</i>	<i>Restoration Time</i>
<i>24 X 7 X 365 Days Monday to Sunday</i>	<i>LEVEL 1</i>	<i>Max. 2 hours (must be on site/work place)</i>	<i>8 hours from issuance of trouble ticket</i>
	<i>LEVEL 2</i>		<i>6 Days from issuance of trouble ticket @ level 1</i>

Level 1: Temporary Restoration- cable re-routing (from underground to aerial and pole installation, fiber blowing on vacant tube).

Level 2: Permanent Restoration- base on original plan. Count zero (0) is the time receive of the trouble ticket by the contractor on Level 1.

Notes: Failure to comply the given restoration time will result to Liquidated Damages.

V. PROJECT DELIVERABLES

A. Maintenance Supplies/Materials and Equipment

Procurement Outside Plant (OSP) Maintenance and Repair Services with Framework for DICT's Luzon Bypass Infrastructure.



Contractor will provide all materials, labor and equipment needed for the maintenance and repair services of the Luzon-Bypass Fiber Optic Network or otherwise provided by DICT.

Note: All materials/supply to be used by the contractor is subject for approval of DICT and shall conform to Common Materials and Equipment Specifications in Annex B

B. Reports, Specification, Practices and Procedures

The following Reports, Practices and Procedures shall be prepared by the Contractor, called as the "Technical Documents" in this paragraph, to be approved by DICT.

- 1) Installation/Construction Practices
- 2) Restoration/Maintenance Procedures
- 3) Inspection and Acceptance Test Procedures, For Outside Plant System and Optical Fiber Cable Systems.
- 4) KPI Report

Note: The Contractor shall submit to DICT 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.

C. Manpower Work Requirements

1. Manpower

Personnel must be properly trained to use such related equipment and do the maintenance and must be available on a moment's notice in cases of fiber cut/break.

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

- a. One (1) Project Manager
- b. One (1) Project Engineer/Coordinator
- c. One (1) Warehouseman
- d. Two (2) Maintenance team that consists of seven (7) personnel (**1 team dedicated per Segment**)
 - One (1) OSP Supervisor
 - Two (2) Lineman
 - Two (2) Splicers/Commissioning personnel
 - Two (2) Support personnel
- e. Two (2) Repair/Restoration team that consists of the following personnel (**1 team allotted per Segment**)
 - One (1) OSP Supervisor
 - Two (2) Lineman
 - Two (2) Splicers/Commissioning personnel

- Two (2) Support personnel
- One (1) HDD Team
- One (1) Fiber Blowing Team

Note: All contractor personnel must have least 3 year's related experience with respect to their positions except for the Project Manager and Project Engineer which must have a minimum 5 years' experience. All must have the necessary professional/trade certifications related to their field of specialization. Also, all personnel communication expenses should be shouldered by the contractor.

2. Satellite Office with Warehouse Capability

The contractor must establish or use existing satellite offices for each Segment of the Luzon Bypass Infrastructure to promptly carry out daily activities.

The Satellite Office, where the technical team will be stationed, should have Warehouse for storage of all materials provided by the Contractor and DICT. Contractor is required to update and maintain record of the list of supplies and materials, when stocks are being used or consumed and are readily available upon request of DICT.

Segment A Satellite Office is responsible from Baler Front-haul to MH149 while Segment B Satellite Office is responsible from SFLU Front-haul to MH 149.

The contractor has the option to choose the location of their offices along the Segment of the LBI, preferably midway of the Segment for better restoration response time. The contractor has the option to use its existing warehousing facilities provided they comply with the response time consistent with the SLA.

3. 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.

Site/work place must have proper warning devices/signage's during activity.

D. Tools and Equipment

As part of the maintenance and repair activities, all necessary equipment and tools must be available at all times. Contractor must have the following common tools and equipment to do the maintenance activities in the duration of the contract.

#	Description
1	*Arc Fusion Machine
2	*Optical Loss Test Set (Power Meter & Light Source)
3	*Optical Time Domain Reflectometer (OTDR)
4	Fiber Blowing machines (w/complete accessories)

5	HDD machines (w/ complete accessories)
6	Splicing Tools/Equipment
7	Micro-duct jointing tools
8	Submersible pump
9	Lineman Tool Kits
10	Cable jack/trailer or Boom truck
11	Jack hammer
12	Air Compressor
13	Fiber Extension Ladder
14	Digging Tools / Carpentry
15	Other necessary tools/ equipment for maintenance

Note: All test equipment that will be used for this project such as Items 1, 2, and 3, shall have updated calibration certificates (issued by any third party) to ensure accuracy of results.

E. Maintenance vehicles

Contractor must have the following minimum vehicles (in good working condition) to mobilize necessary tools and materials that will be used in the maintenance and repair of the network in the duration of the contract.

- 1) Two (2) Splicing Van with Ladder rack/holder
- 2) One (1) Fiber Blowing Vehicle
- 3) One (1) Bucket Truck
- 4) One (1) Set HDD machine (including other vehicle needed for HDD works)
- 5) One (1) Boom Truck
- 6) Two (2) Service Vehicles with Ladder rack/holder
- 7) Two (2) Patrolling Vehicles with GPS

Note: Maintenance Vehicle should already be inclusive of all expenses (i.e., petrol, maintenance, toll fees, LTO registration).

F. Compatibility / Interoperability with the Existing Technology

The specification of the fiber optic cable, (underground and aerial) must be in compliance with the DICT fiber optic requirements which is ITU-T G.652D. All other Outside Plant materials shall conform with the latest Telco standard.

G. Testing and Acceptance

The contractor is responsible in the performance of all civil and cable network pre-test requirement but not limited to:

Fiber Optic Cable (FOC) – attenuation and all its related testing, power meter test, and grounding test and all other test that may need to perform to complete the FOC test requirements.

1. acceptance tests shall be performed to all fiber optic cable to confirm the manufacturer's tests. As per ITU-T G.652D the fiber loss/km:

- at wavelength 1310nm loss shall be **0.4 dB/km** or less;
 - at 1550nm shall be **0.3dB/km** or less.
2. End-to-end attenuation is the amount of optical power loss between cable system connector tips. 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*)
- splice loss shall not be above **0.1 dB for fusion**;
 - connectors shall have insertion losses of **0.5 dB or less**.
3. All OSP installation/construction and materials shall conform with the latest Telco standard.
4. DICT will issue certification of acceptance on all civil and cable network testing done by the contractor.

VI. ASSUMPTIONS OF THE PROJECT

A BIDDER should submit one proposal that satisfies the specifications and requirements given in this Term of Reference for the Procurement of Outside Site Plant (OSP) Maintenance and Repair Services below;

Contractors must submit the following for Bid submission/Bid Opening:

1. Written Statement of the contractor, duly signed by their authorized representative that they have at least five (5) years of direct experience on planning, engineering, supply and delivery, installation, testing and commissioning and experience in operations and maintenance of optical fiber transmission backbone projects/systems.
2. Material specifications based on the Common Material and Equipment Specifications enumerated in Annex B and Framework List (brand name and model number), Installation/Construction Practices, Inspection and Acceptance Test Procedures for Outside Plan System and Optical Fiber Cable Systems, Restoration/Maintenance Procedures, Sample Reports/Documentation for Maintenance.
3. Project Requirement (project implementation organization chart who will implement the project, list of key personnel with their Qualifications/CV/biodata, implementation or work schedule to include work plan). The bidder must provide a dedicated team from start until project completion.
4. Contractor must submit a formal statement confirming that they have the necessary items that will be used in the maintenance and repair of the network mentioned in the Project Deliverables during the duration of the contract including but not limited to: Manpower, Tools and Equipment and Maintenance

Vehicles. Proof of ownership like invoices or DRs, or maybe contract for exclusive use if leased must be submitted during Post-qualification stage.

5. Must hold a PCAB License on Communications Facilities minimum of (AA) 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)

VII. PROJECT COST

Particulars	Qty	ABC
Maintenance (Component 1)	1 lot	Php 7,900,000.00
Repair Services-Framework Agreement (Component 2)		PHP 5,800,000.00
Total		Php 13,700,000.00

VIII. PAYMENT SCHEDULE

- A. For the maintenance of the Luzon Bypass Fiber Optic Network, payment will be made under the following terms:
 - a) Quarterly Payment upon receipt and approval of contractors report.
 - Reports/Documentation for Preventive Maintenance
 1. Monthly submission of maintenance report.
 2. Incident Report, in case of problems encountered.
 3. Pictures before and after restoration
 4. Monthly KPI reports
 - b) At the end of the contract, payment of the remaining balance will be made upon submission of necessary documents as required by DICT.
 - Reports/Documentation for Maintenance
 1. Monthly submission of maintenance report.
 2. Incident Report, in case of problems encountered.
 3. Repair and Test report after restoration activities.
 4. Final as-built plan/drawing approved by DICT, with GPS reading/landmark
- B. Payment for repairs will be on the basis of Call-Off made.
 - Reports/Documents for payment of Purchase Order:
 1. List of materials used (witness by DICT personnel)
 2. Repair and Test report (before and after) restoration
 3. Pictures before and after restoration
 4. Revised/updated as-built plan/drawing with GPS reading/landmark

IX. PROJECT TIMEFRAME

Upon receipt of Notice to Proceed, the duration of the contract is one (1) year for maintenance and repair of the Luzon Bypass FOC network. While the maintenance materials and equipment must be available and inspected within 60 days upon receipt of Notice to Proceed.

X. PROJECT SOURCE OF FUNDS

The Fund Source is the Locally-funded NBP 2020

Approved by:

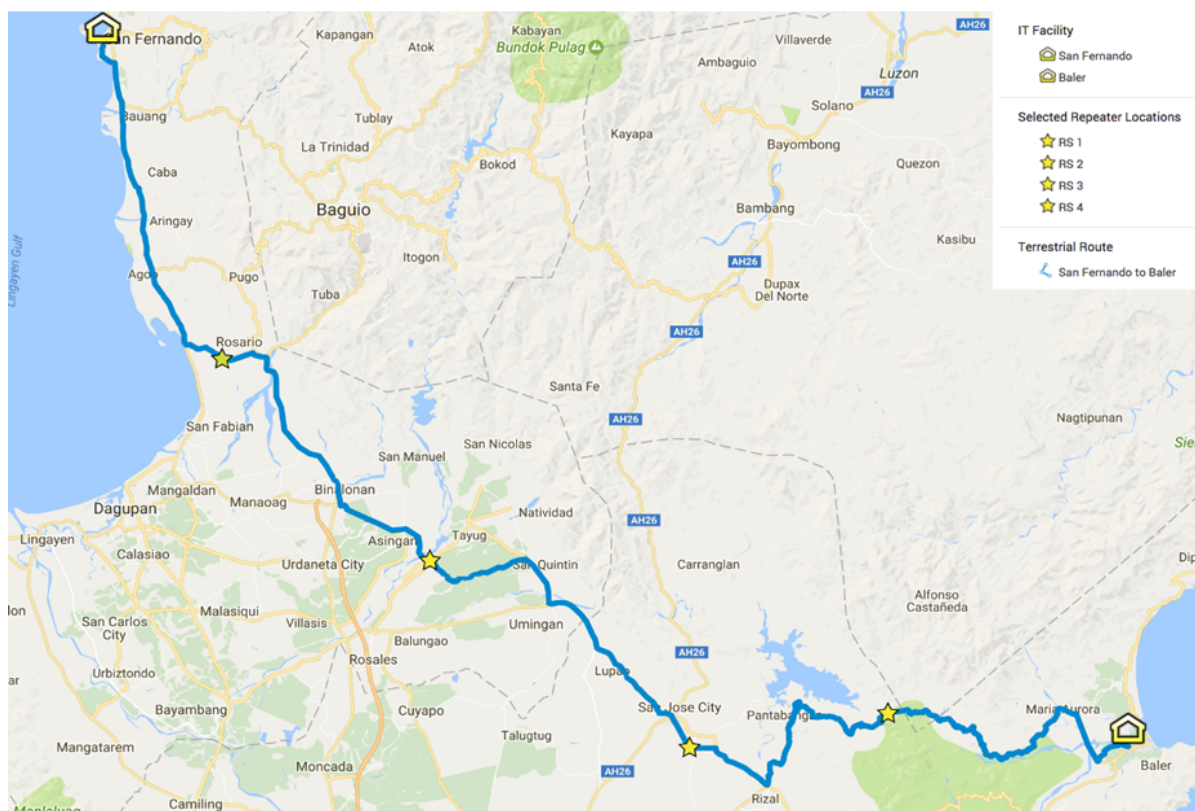
Leo Cipriano L. Urbiztondo, Jr.
Project Director
National Broadband Program

Annex A

Luzon 240km Terrestrial Cable Route

Luzon 240km Terrestrial Cable Route

from San Fdo to Baler and 4 repeater stations at 50-km interval



Annex B

Common Materials and Equipment Specifications

1. Fiber Optic Cable Requirements

Contractor must provide to DICT the detailed specification of their offered fiber optic cable (FOC) vis-a-vis compliance with ITU-T Recommendation G.652d.

a. Cable Construction: General considerations

The basic purpose is to keep transmission and mechanical strength properties stable in the course of the cable manufacturing process, cable installation work and operation. Optical fiber cables offered must be able to withstand all possible weather conditions in the Philippines when used in outside plant and installed underground or aerial. The optical fiber cables and accessories offered must be mechanically strong and chemically resistant to be suitable for use under extreme external condition.

Cable sheath marking shall be as follows;

**Property of DICT Philippines;
Manufacturer's Name and Fiber Count;
Date of Manufacture;
Length Marker; and
Fiber type: SM**

b. Design Consideration

(a) Underground Fiber Blowing (mini cable)

- Mini cable (Air blown) 144c ITU-TG652d
- Black HDPE, a compound of PE and carbon black shall be used for the cable sheath.
- Mini Cable must be fully water blocked and contain an fiber reinforced plastic (FRP) central strength member :1200N
- Cable Fiber Attenuation: 0.35dB/km.max @ 1310nm; 0.22/km.max @1550nm
- Product work with lowfriction tube bundles for optimum blowing performances.
- Maximum outer diameter is 8.5mm, with maximum central strength member of 3.5mm

(b) Client FOC specs.

- The fiber optic cable incorporates loose buffer tubes filled with gel that are stranded via the reverse oscillating lay method around a dielectric central strength member, sheath strength elements which function as the primary strength member, a single electrically chrome-coated steel (ECCS) armor with water blocking material applied to the armor and a polyethylene jacket for overall protection of the cable core
- The central strength member isa a glass/epoxy composite dielectric rod that functions as a strength member and anti-buckling element. Water blocking thread is placed longitudinally along the central member.
- The buffer tubes are made of flexible tube material (FTM) and can contain up to 12 fibers in each tube. The individual fibers and buffer tubes are color coded for ease of identification.
- Gel-filled buffer tubes are filled with a water blocking material that is compatible with the buffer tube material, fiber coating, and fiber color. The material is non-nutritive to fungus, non-hygroscopic, electrically nonconductive, homogeneous, and free from dirt and foreign matter.
- In order to create a round cable, filler rods of the same diameter as the buffer tubes may be used to fill empty positions. Filler rods are made out of high-density polyethylene (HDPE) and are natural in color.
- Fiberglass strength elements are applied over the cable core to provide the cable with the required tensile strength.
- An outer medium-density polyethylene (MDPE) jacket, usually black in color, is applied over the cable to provide overall mechanical protection.

-For ease of jacket removal, a clearly identifiable aramid ripcord is placed underneath the armor layer.

(c) Aerial Cable

- Cable Sheath (for the 48-core FOC)
- Black HDPE, a compound of PE and carbon black shall be used for the cable sheath.
- The moisture barrier shall consist of a longitudinally applied laminate of polymer coated aluminum foil.
- A rip cord shall be laid beneath the outer sheath to facilitate access to the fiber.
- The completed cable shall have sequentially numbered length markers at regular intervals of one meter (1.0m).
- One or more strength members shall be incorporated into a cable structure designed to carry the tensile load associated with installation.
- The fiber reinforced plastic (FRP), serving mainly as the central strength member must be laminated with an MDPE-Jacket to prevent disintegration/breakage of plastic materials use

(d) Identification

The color coding of the loose tubes and the individual fibers within each loose tube shall be as follows:

Tube No./ Fiber No.	Fiber Color	Tube Color
1	Blue	Blue
2	Orange	Orange
3	Green	Green
4	Brown	Brown
5	Slate	Slate
6	White	White
7	Red	Red
8	Black	Black
9	Yellow	Yellow
10	Violet	Violet
11	Rose	Rose
12	Aqua blue	Aqua Blue

Packing of Cables

Cable protection shall include, as a minimum, a covering placed between the cable reel flanges and over the exposed layer of the cable. The covering shall be weather resistant and shall limit solar heating of the cable such that the cable surface temperature does not exceed 10°C above ambient temperatures under maximum solar radiation.



The cable ends shall be accessible for testing, and securely fastened to the reel to prevent the cable from becoming loose in transit or during cable installation.

End caps shall be securely installed to both cable ends to prevent escape of filling compound and entry of moisture during shipping, handling, and storage.

The manufacturer shall state the sizes of cable drums used for the purpose of packing the offered single mode optical fiber cables. The minimum diameter of spool of the cable drums shall be at least 20 times the cable diameter.

(e) Contractor must submit a manufacturer's ISO Certification or other internationally accepted third party certifying authority of their offered FOC.

2. High-Voltage (HV) Power Cable (8-15KV DC)

- HV land cable consists of the following layers, starting from the center and moving toward the outer jacket: seven-strand copper wire No. 6 AWG conductor, semiconducting strand sheath, insulation, semiconducting insulation sheath, helically applied copper shielding tape, and outer polyethylene jacket.
- Weight (kg/m): 0.44
- Outer diameter (mm): 18
- Minimum bend radius (cm): 22
- Pulling tension (ken): 1.11
- Voltage rating (kV DC-conductor to ground): 15
- Current-carrying capacity (A): >50
- Conductor resistance at 25degC (ohms/km): 1.345

3. Micro-duct (7-way)

- Micro-duct size OD/ID: 16mm/12mm diameter (with tolerance of $\pm 1\%$)
- Outer sheath made from HDPE and color orange
- Micro-duct must be metal free and can be installed direct buried
- Minimum working pull strength of 2500 lbs.
- Minimum pressure test is 15 bar
- Color of 7-tubes (white, blue, green, rose, yellow, violet and brown)

4. HDPE pipes:

3.a HDPE- 4 inches' diameter

- Outer sheath made from HDPE and color black
- SDR 11 diameter or equivalent to market available
- Minimum pull strength of 17,500 psi

3.b 40 mm HDPE

- HDPE size OD/ID: 40mm/32mm diameter
- HDPE inside: rib type
- Outer sheath made from HDPE and color black



- Minimum pull strength of 3200 psi.
 - Minimum pressure test is 15 bar
5. **Micro-duct connector**
- Micro-duct connector size OD/ID: 16mm/12mm diameter
 - Connector Outer shell is made from acrylate (clear) or polypropylene
 - Connector must be resistant in corrosion, most chemical and dirt
 - Minimum pressure test is 15 bar with locking clips
6. **HDPE Connector**
- a. **4 inches HDPE**
- Connector for 4 inches pipes either butt fusion or coupler.
 - Connection must be water and dirt resistant
- b. **40mm HDPE (Compression coupling)**
- Compression coupling size OD/ID: 40mm/32mm diameter
 - Connector must be resistant in corrosion, moist chemical and dirt
 - Minimum pressure test is 15 bar
 - Seal way: Rubber ring
7. **Fiber Optic Cable Splicing Closure, Dome-Type**
- Minimum capacity: 144 fiber (for underground)
 - Minimum capacity: 48 fiber (for aerial)
 - Seal way: Rubber ring
 - high-strength engineering plastic shell that can endure harsh conditions such as vibration, impact, tensile cable distortion and strong temperature changes
 - Reusable components to open seal in order to ensure a good airtight waterproof performance.
 - Does not require special tools, easy to install and open the duplicate.
 - Applicable aerial, direct-buried, wall-mounting, duct-mounting, and other accessories.
8. **Micro-duct joint closure (E/E pit)**
- Either Heat Shrinkable or Cold Seal
 - Jointing capacity: 7 tubes
9. **Handheld Optical Time Domain Reflectometer (OTDR)**
- Support Single-mode Optical Time Domain Reflectometer
 - Using "PDA" technology, combining a simple user interface with the features of a mini-OTDR in a "micro" package.
 - Highly portable OTDR to document and trouble-shoot fiber links works.
 - Item should comply with parameters listed below, additional features are accepted.
 - Wavelength of 1310/1550/1625 nm
 - Distance range up to 250 km
10. **Optical Loss Tester**

- All-in-one light source and optical power meter supporting Single Mode (SM) [1310 nm/1550 nm] and Multi-Mode (MM) [850 nm/1300 nm] fiber
- Compact and lightweight
- Measures +23 dBm maximum optical power
- 20 hours of battery (dry cell) operation
- Useful fiber identification modulation function [270 Hz, 1 kHz, 2 kHz and continuous Wave (CW)]
- Item should comply with parameters listed below, additional features are accepted.
- Wavelength 1310/1550nm and 850/1300nm

11. Arc Fusion Splicer

- Automatic splice 7sec for fast mode; 12-15 sec auto mode
- Splice loss maximum 0.02dB for Single Mode Fiber
- Automatic/manual arc calibration
- Portable

12. HDD Machine with Locator

- Working distance up to 500 meters per one shoot
- Maximum Push and Pull Speed, 40m/min

13. Fiber Blowing Machines

- Can blow fiber up to 4km
- Blowing speed up to 100m/min
- Blowing method either air or combination of air and water