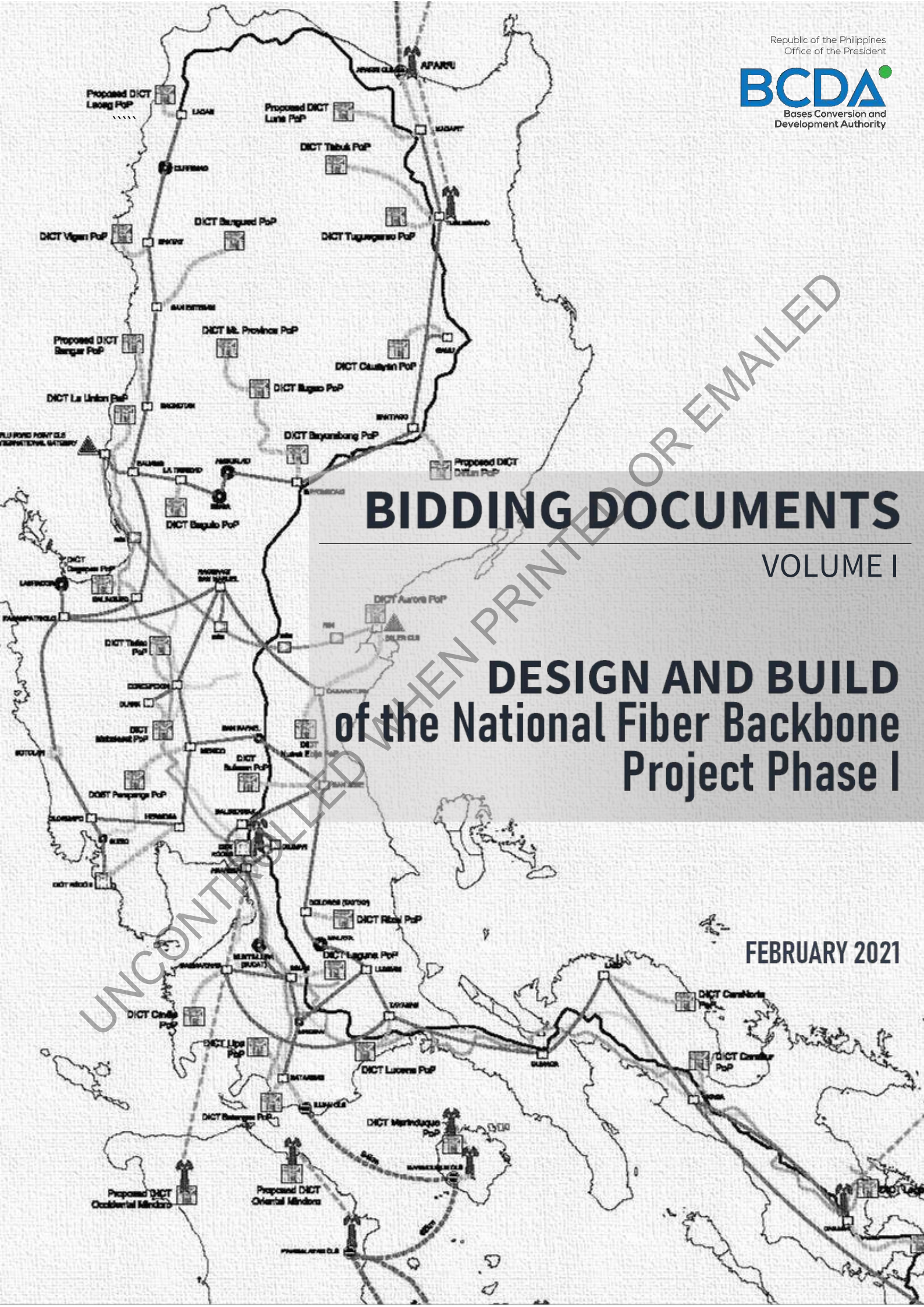
Republic of the Philippines
Office of the President

BCDA
Bases Conversion and Development Authority



BIDDING DOCUMENTS

VOLUME I

DESIGN AND BUILD of the National Fiber Backbone Project Phase I

FEBRUARY 2021

Glossary of Terms, Abbreviations, and Acronyms

ABC – Approved Budget for the Contract.

ARCC – Allowable Range of Contract Cost.

BAC – Bids and Awards Committee

Bid – A signed offer or proposal to undertake a contract submitted by a bidder in response to and in consonance with the requirements of the bidding documents. Also referred to as *Proposal* and *Tender.* (2016 revised IRR, Section 5[c])

Bidder – Refers to a contractor, manufacturer, supplier, distributor and/or consultant who submits a bid in response to the requirements of the Bidding Documents. (2016 revised IRR, Section 5[d])

Bidding Documents – The documents issued by the Procuring Entity as the bases for bids, furnishing all information necessary for a prospective bidder to prepare a bid for the Goods, Infrastructure Projects, and/or Consulting Services required by the Procuring Entity. (2016 revised IRR, Section 5[e])

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

CDA – Cooperative Development Authority.

Consulting Services – Refer to services for Infrastructure Projects and other types of projects or activities of the GOP requiring adequate external technical and professional expertise that are beyond the capability and/or capacity of the GOP to undertake such as, but not limited to: (i) advisory and review services; (ii) pre-investment or feasibility studies; (iii) design; (iv) construction supervision; (v) management and related services; and (vi) other technical services or special studies. (2016 revised IRR, Section 5[i])

Contract – Refers to the agreement entered into between the Procuring Entity and the Supplier or Manufacturer or Distributor or Service Provider for procurement of Goods and Services; Contractor for Procurement of Infrastructure Projects; or Consultant or Consulting Firm for Procurement of Consulting Services; as the case may be, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

Contractor – is a natural or juridical entity whose proposal was accepted by the Procuring Entity and to whom the Contract to execute the Work was awarded. Contractor as used in these Bidding Documents may likewise refer to a supplier, distributor, manufacturer, or consultant.

CPI – Consumer Price Index.

DOLE – Department of Labor and Employment.

DTI – Department of Trade and Industry.

Foreign-funded Procurement or Foreign-Assisted Project – Refers to procurement whose funding source is from a foreign government, foreign or international financing institution as specified in the Treaty or International or Executive Agreement. (2016 revised IRR, Section 5[b]).

GFI – Government Financial Institution.

GOCC – Government-owned and/or –controlled corporation.

Goods – Refer to all items, supplies, materials and general support services, except Consulting Services and Infrastructure Projects, which may be needed in the transaction of public businesses or in the pursuit of any government undertaking, project or activity, whether in the nature of equipment, furniture, stationery, materials for construction, or personal property of any kind, including non-personal or contractual services such as the repair and maintenance of equipment and furniture, as well as trucking, hauling, janitorial, security, and related or analogous services, as well as procurement of materials and supplies provided by the Procuring Entity for such services. The term "related" or "analogous services" shall include, but is not limited to, lease or purchase of office space, media advertisements, health maintenance services, and other services essential to the operation of the Procuring Entity. (2016 revised IRR, Section 5[r])

GOP – Government of the Philippines.

Infrastructure Projects – Include the construction, improvement, rehabilitation, demolition, repair, restoration or maintenance of roads and bridges, railways, airports, seaports, communication facilities, civil works components of information technology projects, irrigation, flood control and drainage, water supply, sanitation, sewerage and solid waste management systems, shore protection, energy/power and electrification facilities, national buildings, school buildings, hospital buildings, and other related construction projects of the government. Also referred to as *civil works or works*. (2016 revised IRR, Section 5[u])

LGUs – Local Government Units.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PCAB – Philippine Contractors Accreditation Board.

PhilGEPS - Philippine Government Electronic Procurement System.

Procurement Project – refers to a specific or identified procurement covering goods, infrastructure project or consulting services. A Procurement Project shall be described, detailed, and scheduled in the Project Procurement Management Plan prepared by the agency which shall be consolidated in the procuring entity's Annual Procurement Plan. (GPPB Circular No. 06-2019 dated 17 July 2019)

PSA – Philippine Statistics Authority.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

UN – United Nations.

INVITATION TO BID

DESIGN, BUILD, AND ESTABLISHMENT OF THE NATIONAL FIBER BACKBONE – PHASE 1

1. The Bases Conversion and Development Authority (BCDA), through the Funds of the Department of Information and Communications Technology (DICT) under the General Appropriations Act which were downloaded to BCDA, intends to apply the sum of **One Billion, Two Hundred Fifty Million 00/100 Pesos (Php1,250,000,000.00)**, inclusive of all applicable taxes and fees, being the Approved Budget for the Contract (ABC), for the **Design, Build and Establishment of the National Fiber Backbone Phase 1.**

   Bids received in excess of the ABC shall be automatically rejected at the opening of the financial proposals.

2. BCDA now invites bids for the **Design, Build and Establishment of the National Fiber Backbone Phase 1**. Completion of the Works is required in **Two Hundred (200) calendar days**. Prospective bidders must have completed similar projects with contract amount of not less than fifty percent (50%) of the ABC.

3. Bidding will be conducted through open competitive bidding procedures using the non-discretionary pass/fail criterion as specified in the Implementing Rules and Regulations (IRR) of Republic Act 9184 (RA 9184), otherwise known as the "Government Procurement Reform Act".

   Bidding is restricted to Filipino citizens/sole proprietorships; and partnerships, corporations, organizations, consortia or joint ventures with at least sixty percent (60%) interest or outstanding capital stock belonging to citizens of the Philippines.

4. Prospective bidders must have at least a license category "**AAA**" and a license classification "**Large B**" from the Philippine Contractors Accreditation Board (PCAB) for **General Engineering, General Building, Electrical Works or Communication Facilities**.

5. Interested bidders may obtain further information from the BCDA Website (http://www.bcda.gov.ph/bids) and inspect the Bidding Documents at the address given below from **17 February 2021 to 12 March 2021** during office hours **between 8:00 AM and 5:00 PM and on 15 March 2021 between 8:00AM to 12:00NN**.

6. A complete set of Bidding Documents may be purchased by interested Bidders from the address below and upon payment of a nonrefundable fee in the amount of **PhP75,000.00**.

   It may also be downloaded from the website of BCDA (bcda.gov.ph) and the Philippine Government Electronic Procurement System (PhilGEPS)**.**

Interested Bidders who did not purchase and fully pay the Bidding Documents will not be allowed to participate in the bidding.

7. BCDA will hold a **Pre-Bid Conference on 26 February 2021 at 10:00AM** at the BCDA Corporate Center, 2/F Bonifacio Technology Center, 31st Street, corner 2nd Avenue, Bonifacio Global City, Taguig City.

8. **Bids must be delivered not later than 15 March 2021 at 12:00NN** at the BCDA Corporate Center, 2/F Bonifacio Technology Center, 31st Street, corner 2nd Avenue, Bonifacio Global City, Taguig City. All bids must be accompanied by a bid security in any of the acceptable forms stated in ITB Clause 15.

   Late bids shall not be accepted.

   Bids will be opened in the presence of the bidders' representatives on 15 March 2021 at 1:00PM at the BCDA Corporate Center, 2/F Bonifacio Technology Center, 31st Street, corner 2nd Avenue, Bonifacio Global City, Taguig City.

   For the detailed evaluation of the design and build proposals a two-step procedure shall be adopted by the SBAC consistent with Annex G - Guidelines for the Procurement and Implementation of Contracts for Design and Build Infrastructure Projects of the Revised IRR of RA 9184, which will be undertaken with the assistance of DICT.

9. BCDA reserves the right to accept or reject any bid, to terminate the bidding process, and to reject all bids at any time prior to contract award, without incurring any liability to the affected bidder or bidders.

10. For further information on this Invitation to Bid, please refer to:

    Ms. Melinda M. Docallos
    Head Secretariat, Special BAC
    Tel: (632) 8575-1700
    Fax: (632) 816-0996
    Email: mmdocallos@bcda.gov.ph
    Website: bcda.gov.ph

    Date of Posting: **17 Feb 2021**

Aileen An. R. Zosa
Chairperson
Special BAC

Section II. Instructions to Bidders

1. Scope of Bid

The Procuring Entity, the Bases Conversion and Development Authority invites Bids for the **Design, Build and Establishment of the National Fiber Backbone Phase 1**.

The Procurement Project (referred to herein as "Project") is for the construction of Works, as described in Section VI (Specifications).

2. Funding Information

2.1. The GOP through the source of funding as indicated below for 2020 in the amount of *P1,250,000,000.00.*

2.2. The source of funding is:

NGA, the General Appropriations Act or Special Appropriations Fund of the Department of Information and Communications Technology.

3. Bidding Requirements

The Bidding for the Project shall be governed by all the provisions of RA No. 9184 and its 2016 revised IRR, including its Generic Procurement Manual and associated policies, rules and regulations as the primary source thereof, while the herein clauses shall serve as the secondary source thereof.

Any amendments made to the IRR and other GPPB issuances shall be applicable only to the ongoing posting, advertisement, or invitation to bid by the BAC through the issuance of a supplemental or bid bulletin.

The Bidder, by the act of submitting its Bid, shall be deemed to have inspected the site, determined the general characteristics of the contracted Works and the conditions for this Project, such as the location and the nature of the work; (b) climatic conditions; (c) transportation facilities; (c) nature and condition of the terrain, geological conditions at the site communication facilities, requirements, location and availability of construction aggregates and other materials, labor, water, electric power and access roads; and (d) other factors that may affect the cost, duration and execution or implementation of the contract, project, or work and examine all instructions, forms, terms, and project requirements in the Bidding Documents.

4. Corrupt, Fraudulent, Collusive, Coercive, and Obstructive Practices

The Procuring Entity, as well as the Bidders and Contractors, shall observe the highest standard of ethics during the procurement and execution of the contract. They or through an agent shall not engage in corrupt, fraudulent, collusive, coercive, and

obstructive practices defined under Annex "I" of the 2016 revised IRR of RA No. 9184 or other integrity violations in competing for the Project.

5. Eligible Bidders

5.1. Only Bids of Bidders found to be legally, technically, and financially capable will be evaluated.

5.2. The Bidder must have an experience of having completed a Single Largest Completed Contract (SLCC) that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC adjusted, if necessary, by the Bidder to current prices using the PSA's CPI, except under conditions provided for in Section 23.4.2.4 of the 2016 revised IRR of RA No. 9184.

A contract is considered to be "similar" to the contract to be bid if it has the major categories of work stated in the **BDS**.

5.3. For Foreign-funded Procurement, the Procuring Entity and the foreign government/foreign or international financing institution may agree on another track record requirement, as specified in the Bidding Document prepared for this purpose.

5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.2 of the 2016 IRR of RA No. 9184.

6. Origin of Associated Goods

There is no restriction on the origin of Goods other than those prohibited by a decision of the UN Security Council taken under Chapter VII of the Charter of the UN.

7. Subcontracts

7.1. The Bidder may subcontract portions of the Project to the extent allowed by the Procuring Entity as stated herein, but in no case more than fifty percent (50%) of the Project.

The Procuring Entity has prescribed that:

> Subcontracting is allowed. The portions of the Project and the maximum percentage allowed to be subcontracted are indicated in the **BDS,** which shall not exceed fifty percent (50%) of the contracted Works.

7.1. The Supplier may identify its subcontractor during the contract implementation stage. Subcontractors identified during the bidding may be changed during the implementation of this Contract. Subcontractors must

submit the documentary requirements under Section 23.1 of the 2016 revised IRR of RA No. 9184 and comply with the eligibility criteria specified in **ITB** Clause 5 to the implementing or end-user unit.

7.2. Subcontracting of any portion of the Project does not relieve the Contractor of any liability or obligation under the Contract. The Supplier will be responsible for the acts, defaults, and negligence of any subcontractor, its agents, servants, or workmen as fully as if these were the Contractor's own acts, defaults, or negligence, or those of its agents, servants, or workmen.

8. Pre-Bid Conference

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time and either at its physical address and/or through videoconferencing as indicated in the **Invitation to Bid** (**IB).**

9. Clarification and Amendment of Bidding Documents

Prospective bidders may request for clarification on and/or interpretation of any part of the Bidding Documents. Such requests must be in writing and received by the Procuring Entity, either at its given address or through electronic mail indicated in the **IB**.

10. Documents Comprising the Bid: Eligibility and Technical Components

10.1. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.

10.2. If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. For Contracting Parties to the Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.

10.3. A valid PCAB License is required, and in case of joint ventures, a valid special PCAB License, and registration for the type and cost of the contract for this Project. Any additional type of Contractor license or permit shall be indicated in the **BDS**.

10.4. A List of Contractor's key personnel (e.g., Project Manager, Project Engineers, Materials Engineers, and Foremen) assigned to the contract to be bid, with their complete qualification and experience data shall be provided. These key personnel must meet the required minimum years of experience set in the **BDS**.

10.5. A List of Contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership, certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be, must meet the minimum requirements for the contract set in the **BDS**.

11. Documents Comprising the Bid: Financial Component

11.1. The second bid envelope shall contain the financial documents for the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.

11.2. Any bid exceeding the ABC indicated in paragraph 1 of the **IB** shall not be accepted.

11.3. For Foreign-funded procurement, a ceiling may be applied to bid prices provided the conditions are met under Section 31.2 of the 2016 revised IRR of RA No. 9184.

12. Alternative Bids

Bidders shall submit offers that comply with the requirements of the Bidding Documents, including the basic technical design as indicated in the drawings and specifications. Unless there is a value engineering clause in the **BDS**, alternative Bids shall not be accepted.

13. Bid Prices

All bid prices for the given scope of work in the Project as awarded shall be considered as fixed prices, and therefore not subject to price escalation during contract implementation, except under extraordinary circumstances as determined by the NEDA and approved by the GPPB pursuant to the revised Guidelines for Contract Price Escalation guidelines.

14. Bid and Payment Currencies

14.1. Bid prices may be quoted in the local currency or tradeable currency accepted by the BSP at the discretion of the Bidder. However, for purposes of bid evaluation, Bids denominated in foreign currencies shall be converted to Philippine currency based on the exchange rate as published in the BSP reference rate bulletin on the day of the bid opening.

14.2. *Payment of the contract price shall be made in* Philippine Pesos.

15. Bid Security

15.1. The Bidder shall submit a Bid Securing Declaration or any form of Bid Security in the amount indicated in the **BDS**, which shall be not less than the percentage of the ABC in accordance with the schedule in the **BDS**.

15.2. The Bid and bid security shall be valid for 120 days after Bid Opening. Any bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

16. Sealing and Marking of Bids

Each Bidder shall submit one copy of the first and second components of its Bid.

The Procuring Entity may request additional hard copies and/or electronic copies of the Bid. However, failure of the Bidders to comply with the said request shall not be a ground for disqualification.

If the Procuring Entity allows the submission of bids through online submission to the given website or any other electronic means, the Bidder shall submit an electronic copy of its Bid, which must be digitally signed. An electronic copy that cannot be opened or is corrupted shall be considered non-responsive and, thus, automatically disqualified.

17. Deadline for Submission of Bids

The Bidders shall submit on the specified date and time and either at its physical address or through online submission as indicated in paragraph 7 of the **IB.**

18. Opening and Preliminary Examination of Bids

18.1. The BAC shall open the Bids in public at the time, on the date, and at the place specified in paragraph 9 of the **IB**. The Bidders' representatives who are present shall sign a register evidencing their attendance. In case videoconferencing, webcasting or other similar technologies will be used, attendance of participants shall likewise be recorded by the BAC Secretariat.

In case the Bids cannot be opened as scheduled due to justifiable reasons, the rescheduling requirements under Section 29 of the 2016 revised IRR of RA No. 9184 shall prevail.

18.2. The preliminary examination of Bids shall be governed by Section 30 of the 2016 revised IRR of RA No. 9184.

19. Detailed Evaluation and Comparison of Bids

19.1. The Procuring Entity's BAC shall immediately conduct a detailed evaluation of all Bids rated "*passed*" using non-discretionary pass/fail criteria. The BAC shall consider the conditions in the evaluation of Bids under Section 32.2 of 2016 revised IRR of RA No. 9184.

19.2. If the Project allows partial bids, all Bids and combinations of Bids as indicated in the **BDS** shall be received by the same deadline and opened and evaluated simultaneously so as to determine the Bid or combination of Bids offering the lowest calculated cost to the Procuring Entity. Bid Security as required by **ITB** Clause 16 shall be submitted for each contract (lot) separately.

19.3. In all cases, the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184 must be sufficient for the total of the ABCs for all the lots participated in by the prospective Bidder.

20. Post Qualification

Within a non-extendible period of five (5) calendar days from receipt by the Bidder of the notice from the BAC that it submitted the Lowest Calculated Bid, the Bidder shall submit its latest income and business tax returns filed and paid through the BIR Electronic Filing and Payment System (eFPS), and other appropriate licenses and permits required by law and stated in the **BDS**.

21. Signing of the Contract

The documents required in Section 37.2 of the 2016 revised IRR of RA No. 9184 shall form part of the Contract. Additional Contract documents are indicated in the **BDS**.

Bid Data Sheet

ITB Clause	
	For this purpose, contracts similar to the Project refer to contracts which have the same major categories of work, which shall be: I. The bidder should be able to show a Design Contract for a project, within the last ten years, of at least 50% of the ABC (P625,000,000) or at least 2 Design Contracts for projects within the last ten years, with an aggregate total of at least 50% of the ABC (P625,000,000) involving any or a combination of the following: 1. Design of Laying down of an aggregate of 25km of Fiber Optic Cable with Equipment; 2. Design of Optical Transport Network; 3. Design of ICT Network and Telecommunications Facilities. **AND** II. The bidder should be able to present a Civil Works Contract for a project within the last ten years of at least 50% of the ABC (P625,000,000) or at least 2 Civil Works Contracts within the last ten years, with an aggregate total of at least 50% of the ABC (P625,000,000) involving any or a combination of the following: 1.Laying down of an aggregate of 25km of Fiber Optic Cables; 2.Civil Works of roads with provision for underground electrical power or telecom utilities or installation of underground electrical power or telecom underground utilities. **<u>Or, in lieu of I and II above:</u>** Design and Build Contract for a project within the last ten years of at least 50% of the ABC (P625,000,000) or at least 2 Design and Build Contracts with an aggregate of 50% of the ABC, involving any or a combination of the following: 1. Laying down of an aggregate of 25km of Fiber Optic Cable with Equipment; 2. Optical Transport Network; 3. ICT Network and Telecommunications Facilities 4. Civil Works of roads with provision for underground electrical power or telecom utilities or installation of underground electrical power or telecom underground utilities
7.1	The Bidder may subcontract a maximum of fifty percent (50%) of the Works subject to prior written approval of BCDA.
10.3	*<u>For PCAB Licenses:</u>* A PCAB License of AAA Large B is required for the Project. In case of Consortium, a Special PCAB license is required and at least one (1) company or partner of the Consortium should have a PCAB license of AAA Large B, and it is the constructor which

<table>
<tr><td></td><td>shall possess the said PCAB License. In case of Joint Venture (JV), a Special PCAB License is required for JV, and all JV partners must secure a PCAB License. For individual companies/bidders, i.e. neither JV nor Consortium, their PCAB Licenses may be submitted during Post-Qualification.

The PCAB License must be in General Engineering, General Building, Electrical Works, or Communication Facilities.</td></tr>
<tr><td>10.4</td><td>The key personnel must meet the required minimum years of experience set below:

<table>
<tr><td>Project Manager

Refer to Vol. II of the Bidding Documents, Section 3.2 Manpower</td><td>1</td></tr>
<tr><td>Senior Telecommunications Engineers

Refer to Vol. II of the Bidding Documents, Section 3.2 Manpower</td><td>5</td></tr>
<tr><td>Safety Officer

Refer to Vol. II of the Bidding Documents, Section 3.2 Manpower</td><td>1</td></tr>
</table>

The licenses and certifications/accreditations of the nominated personnel must be valid during the submission of bids. If expired, the bidder must submit proof of renewal.

The bidder is not allowed to combine work experiences of two or more personnel in order to meet the required minimum years of experience.

The bidder is not allowed to nominate a person more than once.

The bidder will supplement these personnel with Technicians/Installers and other personnel to comply with the 200-day implementation period.</td></tr>
<tr><td>10.5</td><td>Refer to Vol. II of the Bidding Documents, under Section 3.3 Tools, Equipment and Machinery
The proposed minimum equipment should be sufficient to complete the project in 200 calendar days or less.

Supporting documents:

I. If <u>owned</u>, supported by
(1) Proof of ownership which shows type of equipment and capacity; AND
(2) A certification by the bidder of availability of the equipment for the duration of the project.

II. If under <u>lease agreement</u>:
(1) Lease Agreement between lessor and lessee,</td></tr>
</table>

	(2) Proof of Ownership of the Lessor to be included in the Technical Proposal, AND (3) Certification of Availability of Equipment from the equipment signed by the lessor for the duration of the project; III. If under **purchase agreement**: (1) Purchase Agreement between the bidder and the owner, AND (2) Certification of Availability of Equipment from the vendor for the duration of the project. **Manufacturer's Authorization to resell the following**: 1. Optical Transport Network System 2. Transponders 3. Fiber Optic Cable 4. HDPE Ducts 5. Generator Set
12	*Since this is a Design and Build project, submission of Value Engineering is allowed.*
15.1	The bid security shall be in the form of a Bid Securing Declaration **or** any of the following forms and amounts: a. The amount of not less than P25,000,000 *[two percent (2%) of ABC],* if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; b. The amount of not less than P62,500,000 *[five percent (5%) of ABC]* if bid security is in Surety Bond.
19.2	Partial bids are not allowed.
20	*No further instructions*
21	List of additional contract documents relevant to the Project (to be submitted after issuance of Notice of Award): 1. Construction Schedule and S-Curve; 2. Manpower Schedule; 3. Construction Methods; 4. Equipment Utilization Schedule; and 5. Safety and Health Program approved by DOLE.

Section V. General Conditions of Contract

Scope of Contract

This Contract shall include all such items, although not specifically mentioned, that can be reasonably inferred as being required for its completion as if such items were expressly mentioned herein. All the provisions of RA No. 9184 and its 2016 revised IRR, including the Generic Procurement Manual, and associated issuances, constitute the primary source for the terms and conditions of the Contract, and thus, applicable in contract implementation. Herein clauses shall serve as the secondary source for the terms and conditions of the Contract.

This is without prejudice to Sections 74.1 and 74.2 of the 2016 revised IRR of RA No. 9184 allowing the GPPB to amend the IRR, which shall be applied to all procurement activities, the advertisement, posting, or invitation of which were issued after the effectivity of the said amendment.

Sectional Completion of Works

If sectional completion is specified in the **Special Conditions of Contract (SCC)**, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date shall apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

Possession of Site

4.1. The Procuring Entity shall give possession of all or parts of the Site to the Contractor based on the schedule of delivery indicated in the **SCC,** which corresponds to the execution of the Works. If the Contractor suffers delay or incurs cost from failure on the part of the Procuring Entity to give possession in accordance with the terms of this clause, the Procuring Entity's Representative shall give the Contractor a Contract Time Extension and certify such sum as fair to cover the cost incurred, which sum shall be paid by Procuring Entity.

4.2. If possession of a portion is not given by the above date, the Procuring Entity will be deemed to have delayed the start of the relevant activities. The resulting adjustments in contract time to address such delay may be addressed through contract extension provided under Annex "E" of the 2016 revised IRR of RA No. 9184.

The Contractor's Obligations

The Contractor shall employ the key personnel named in the Schedule of Key Personnel indicating their designation, in accordance with **ITB** Clause 10.3 and specified in the **BDS**, to carry out the supervision of the Works.

The Procuring Entity will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are equal to or better than those of the personnel listed in the Schedule.

Performance Security

5.1. Within ten (10) calendar days from receipt of the Notice of Award from the Procuring Entity but in no case later than the signing of the contract by both parties, the successful Bidder shall furnish the performance security in any of the forms prescribed in Section 39 of the 2016 revised IRR.

5.2. The Contractor, by entering into the Contract with the Procuring Entity, acknowledges the right of the Procuring Entity to institute action pursuant to RA No. 3688 against any subcontractor be they an individual, firm, partnership, corporation, or association supplying the Contractor with labor, materials and/or equipment for the performance of this Contract.

Site Investigation Reports

The Contractor, in preparing the Bid, shall rely on any Site Investigation Reports referred to in the **SCC** supplemented by any information obtained by the Contractor.

Warranty

7.1. In case the Contractor fails to undertake the repair works under Section 62.2.2 of the 2016 revised IRR, the Procuring Entity shall forfeit its performance security, subject its property(ies) to attachment or garnishment proceedings, and perpetually disqualify it from participating in any public bidding. All payables of the GOP in his favor shall be offset to recover the costs.

7.2. The warranty against Structural Defects/Failures, except that occasioned-on force majeure, shall cover the period from the date of issuance of the Certificate of Final Acceptance by the Procuring Entity. Specific duration of the warranty is found in the **SCC**.

Liability of the Contractor

Subject to additional provisions, if any, set forth in the **SCC**, the Contractor's liability under this Contract shall be as provided by the laws of the Republic of the Philippines.

If the Contractor is a joint venture, all partners to the joint venture shall be jointly and severally liable to the Procuring Entity.

Termination for Other Causes

Contract termination shall be initiated in case it is determined *prima facie* by the Procuring Entity that the Contractor has engaged, before, or during the

implementation of the contract, in unlawful deeds and behaviors relative to contract acquisition and implementation, such as, but not limited to corrupt, fraudulent, collusive, coercive, and obstructive practices as stated in **ITB** Clause 4.

Dayworks

Subject to the guidelines on Variation Order in Annex "E" of the 2016 revised IRR of RA No. 9184, and if applicable as indicated in the **SCC**, the Dayworks rates in the Contractor's Bid shall be used for small additional amounts of work only when the Procuring Entity's Representative has given written instructions in advance for additional work to be paid for in that way.

Program of Work

11.1. The Contractor shall submit to the Procuring Entity's Representative for approval the said Program of Work showing the general methods, arrangements, order, and timing for all the activities in the Works. The submissions of the Program of Work are indicated in the **SCC.**

11.2. The Contractor shall submit to the Procuring Entity's Representative for approval an updated Program of Work at intervals no longer than the period stated in the **SCC.** If the Contractor does not submit an updated Program of Work within this period, the Procuring Entity's Representative may withhold the amount stated in the **SCC** from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program of Work has been submitted.

Instructions, Inspections and Audits

The Contractor shall permit the GOP or the Procuring Entity to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors of the GOP or the Procuring Entity, as may be required.

Advance Payment

The Procuring Entity shall, upon a written request of the Contractor which shall be submitted as a Contract document, make an advance payment to the Contractor in an amount not exceeding fifteen percent (15%) of the total contract price, to be made in lump sum, or at the most two installments according to a schedule specified in the **SCC**, subject to the requirements in Annex "E" of the 2016 revised IRR of RA No. 9184.

Progress Payments

The Contractor may submit a request for payment for Work accomplished. Such requests for payment shall be verified and certified by the Procuring Entity's Representative/Project Engineer. Except as otherwise stipulated in the **SCC**, materials

and equipment delivered on the site but not completely put in place shall not be included for payment.

Operating and Maintenance Manuals

15.1. If required, the Contractor will provide "as built" Drawings and/or operating and maintenance manuals as specified in the **SCC.**

15.2. If the Contractor does not provide the Drawings and/or manuals by the dates stated above, or they do not receive the Procuring Entity's Representative's approval, the Procuring Entity's Representative may withhold the amount stated in the **SCC** from payments due to the Contractor.

Special Conditions of Contract

GCC Clause	
2	*The intended Completion Date is the 200th day upon issuance of the NTP.*
4.1	*Upon issuance of Notice to Proceed.*
6	Please refer to the Terms of Reference. (Vol. II of the Bidding Documents)
7.2	In case of **permanent structures**, such as buildings of types 4 and 5 as classified under the National Building Code of the Philippines and other structures made of steel, iron, or concrete which comply with relevant structural codes (e.g., DPWH Standard Specifications), such as, but not limited to, steel/concrete bridges, flyovers, aircraft movement areas, ports, dams, tunnels, filtration and treatment plants, sewerage systems, power plants, transmission and communication towers, railway system, and other similar permanent structures:] **Fifteen (15) years**. **For Transponder Component: five (5) years** Supported by any document from the Manufacturer that the equipment to be supplied should not reach its End of Life in the next 5 years **For Optical Transport Network Component: five (5) years** Supported by any document such as but not limited to: Brochure, Manuals, and/or Website, from the Manufacturer that the equipment to be supplied should not reach its End of Life in the next 5 years **For Fiber Optic Build Component: two (2) years**
10	*Since this is a Design and Build project, the bidder may opt to have Dayworks.*
11.1	The Contractor shall submit the Program of Work to the Procuring Entity's Representative within *ten (10)* days of delivery of the Notice of Award.
11.2	The amount to be withheld for late submission of an updated Program of Work is one-tenth of 1% of the Contract Amount, for each day of delay.
13	Advanced Payment of 15% is allowed.
14	Please refer to Payment Schedule in the Bid Data Sheet
15.1	The date by which operating and maintenance manuals are required is on or *before the submission of Final Billing*. The date by which "as built" drawings are required is *on or before the submission of Final Billing*.
15.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required is *the amount in the Final Billing*.

Section VI. Specifications

(Please refer to the Volume II of the Bidding Documents.)

Section VII. Drawings / Maps

(Please refer to the Volume II of the Bidding Documents.)

Section VIII. Bill of Quantities

FOC BUILD NETWORK
BILL OF QUANTITIES

	Description	Qty	Price (VAT Inclusive)
1	**48c Segment 1: NGCP Bauang- SFLU ICLS, 6.13km**		
	1. FOC, 6.25km/drum	1 drum	
	2. Manhole	7	
	3. Optical Joint Enclosure	2	
	4. Optical Distribution Frame	2	
	5. Cable Entrance Facility	2	
2	**48c Segment 2: DICT Roces - NGCP Araneta, 3.0km**		
	1. FOC, 6.25km/drum	1 drum	
	2. Manhole	4	
	3. Optical Joint Enclosure	2	
	4. Optical Distribution Frame	2	
	5. Cable Entrance Facility	2	
3	**48c Segment 3: NGCP Subic - DICT NGDC3, 6.58km**		
	1. FOC, 6.25km/drum	2 drums	
	2. Manhole	7	
	3. Optical Joint Enclosure	2	
	4. Optical Distribution Frame	2	
	5. Cable Entrance Facility	2	
4	**48c Segment 4: NGCP La Trinidad - DICT Baguio PoP, 4.8km**		
	1. FOC, 6.25km/drum	1 drum	
	2. Manhole	6	
	3. Optical Joint Enclosure	2	
	4. Optical Distribution Frame	2	
	5. Cable Entrance Facility	2	
5	**48c Segment 5: DICT Baguio PoP - BCDA Camp John Hay, 5.23km**		
	1. FOC, 6.25km/drum	1 drum	
	2. Manhole	6	
	3. Optical Joint Enclosure	2	
	4. Optical Distribution Frame	2	
	5. Cable Entrance Facility	2	
6	**48c Segment 6: DICT SFLU ICLS - BCDA PPMC, 2.8km**		
	1. FOC, 6.25km/drum	1 drum	
	2. Manhole	4	
	3. Optical Joint Enclosure	2	
	4. Optical Distribution Frame	2	
	5. Cable Entrance Facility	2	
7	**48c Segment 7: NGCP Concepcion - BCDA NGAC, 15.1km**		
	1. FOC, 6.25km/drum	3 drums	
	2. Manhole	16	
	3. Optical Joint Enclosure	3	
	4. Optical Distribution Frame	2	
	5. Cable Entrance Facility	2	
8	**48c Segment 8: NGCP Clark - BCDA Clark FPZ, 9.8km**		
	1. FOC, 6.25km/drum	2 drums	
	2. Manhole	11	
	3. Optical Joint Enclosure	3	
	4. Optical Distribution Frame	2	
	5. Cable Entrance Facility	2	
9	**144c miniFOC: DICT SFLU ICLS - DICT Baler, 250km**		
	1. FOC, 6.25km/drum	42 drums	
	2. Optical Joint Enclosure	42	
	3. Optical Distribution Frame	3	
10	7-way HDPE Microducts, 1km incl of kits and accessories	57 drums	
11	TELECOM Poles, 10m and pole hardwares	12	
12	Spares	1 lot	

TRANSPONDER SYSTEM
BILL OF QUANTITIES

	Description	Qty	Price (VAT Inclusive)
1	600 Gbps Transponder System SFLU - Baler - Equinix Cable Landing Station	4 Lots	
2	Rectifier System (SFLU, Baler, Sta. Maria RS)	3 Lots	
3	**NMS**		
	1. Base Software	1 lot	
	2. License		
	3. Server (2 *INTEL 2.3GHZ 16CORE; 64GB MEM; 3 X 800GB SSD) FOR MCP		
3	**Test Equipment**		
	a. OTDR Single Mode (SM) [1310 nm/1550 nm] and Multi-Mode (MM) [850 nm/1300 nm] fiber	2 sets	
	b. Light Source Single Mode (SM) [1310 nm/1550 nm] and Multi-Mode (MM) [850 nm/1300 nm] fiber	2 sets	
	c. Power Meter Single Mode (SM) [1310 nm/1550 nm] and Multi-Mode (MM) [850 nm/1300 nm] fiber	2 sets	
	Spares		
4	Power Cords	3 pcs	
5	4X25G, WDM, SMF, 1310NM, 10 KM QSFP28	3 pcs	
6	2X400G 35/56GBAUD EDFA C-Band 8XQSFP28 Module	2 pcs	
7	2X400G 35/56GBAUD EDFA C-Band 8XQSFP28 Module	2 pcs	
8	48 VDC POWER MODULE	2 pcs	
9	Transponder Chassis Power Modules, CTRL, Fan Modules	3 sets	
10	Base Software Licenses	3 sets	
11	Brackets	1 set	
12	Installation Kits	1 set	
13	Other control subsystems, access panels, and peripherals	3 sets	
14	LC-LC Optical Patch Cords 10M SM/MM 1310nm	60 pcs	
15	LC-LC Optical Patch Cords 20M SM/MM 1310nm	60 pcs	
16	LC-LC Optical Patch Cords 30M SM/MM 1310nm	60 pcs	
17	LC Optical Attenuators 1dB SM/MM 1310nm	150 pcs	
18	LC Optical Attenuators 3dB	150 pcs	
19	LC Optical Attenuators 6dB	150 pcs	
20	LC Optical Attenuators 10dB	150 pcs	
21	Fused 2x2 LC - LC Couplers	90 pcs	
22	Rectifier Module	2 pcs	
23	Slot Fillers	2 pcs	
24	Other peripherals required to maintain the rectifier system	1 set	

OPTICAL TRANSPORT NETWORK
BILL OF QUANTITIES

	Description	Qty	Price (VAT Inclusive)
1	**DWDM/ ROADM Broadband System**		
	a. DWDM/ ROADM	25 sets	
	b. In-Line Amplifier (ILA)	1 set	
3	**NMS**		
	1. Base Software	1 lot	
	2. License		
	3. Server		
3	**Power and Backup Power System**		
	a. Rectifier	2 sites	
	b. Battery	2 sites	
	c. Genset	2 sets	
	d. Fuel Tank	1 set	
	e. Air Conditioning Unit	2 sets	
4	**Spares**	1 lot	

100Gbps IP TRANSIT
BILL OF QUANTITIES

	Description	Qty	Price (VAT Inclusive)
1	100 Gbps IP Transit- Tier 1	1 Lot	

Supplemental BOQs (Template)

Instructions: Please include ALL other cost items not found in the baseline BOM but are essential in completing the project.

	Description	Qty	Price (VAT Inclusive)

Design and Build of the National Fiber Backbone Project Phase I

BID FORMS

STATEMENT OF ALL ON-GOING GOVERNMENT AND PRIVATE CONTRACTS, INCLUDING CONTRACTS AWARDED BUT NOT YET STARTED, IF ANY

[Date]

_____
_____
_____
_____
_____

Dear _____,

In compliance with the eligibility requirements for the bidding of the Design and Build of the National Fiber Backbone Project Phase I, this is to certify that *[name and complete address of Bidder]* has the following on-going government and private contracts. [Including contracts awarded but not yet started]:

Tab No.	Name of Contract	Date of Contract	Contract Duration	Owner's Name and Address	Nature of Work	Contractor's Role (whether sole contractor, subcontractor or partner in a JV)	Total Contract Value at Award (in Php)	[Estimated] Date of Completion	Total Contract Value at Completion, if applicable (in Php)	Percentages of Planned & Actual Accomplishments, if applicable	Value of Outstanding Works, if applicable (in Php)

BCDA	

Yours sincerely,

[Signature over printed name of Authorized Representative]
[Title]
[Name of Firm]

Note: This statement shall be supported by contracts or notices of award or notices to proceed issued by the owners. These supporting documents shall be numbered and tabbed in the same sequence as the list of contracts appears in this statement.

STATEMENT OF SINGLE LARGEST COMPLETED CONTRACT (SLCC)

[Date]

_____
_____
_____
_____
_____

Dear_____,

In compliance with the eligibility requirements for the bidding of the Design and Build of the National Fiber Backbone Project Phase I, this is to certify that *[name and complete address of Bidder]* has the following completed government and private contracts:

Tab No.	Name of Contract	Date of Contract	Contract Duration	Owner's Name and Address	Nature of Work	Contractor's Role (whether sole contractor, subcontractor or partner in a JV)	Total Contract Value at Award (in Php)	Date of Completion	Total Contract Value at Completion, if applicable (in Php)	Percentages of Planned & Actual Accomplishments, if applicable	Value of Outstanding Works, if applicable (in Php)

Yours sincerely,

[Signature over printed name of Authorized Representative]
[Title]
[Name of Firm]

Note: This statement shall be supported by contracts, certificate of completion or owner's final acceptance and CPES rating sheets, if applicable. These supporting documents shall be numbered and tabbed in the same sequence as the list of contracts appears in this statement.

CONSORTIUM AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

This Agreement made and entered into by and between:

(Company Name) a sole proprietorship/corporation duly organized and existing under and by virtue of the laws of the Republic of the Philippines with principal address at **(Address)**, herein represented by its Owner/Authorized Managing Officer, hereinafter called to as the First Party;

- and -

(Company Name) a sole proprietorship/corporation duly organized and existing under and by virtue of the laws of the Republic of the Philippines with Principal address at **(Address)**, herein represented by its Owner/Authorized Managing Officer, hereafter called to as the Second Party;

WITNESSETH: That -

WHEREAS, the **(Name of Procuring Entity)**, has advertised for public bidding the **(Name of Project)** and **(Location)**;

WHEREAS, the parties are both desirous of prequalifying for and participating in the bidding of the above sated project;

WHEREAS, the parties believe that they can best maximize their chances of prequalifying for the said public bidding and can satisfactorily prosecute the project should they win and be awarded the contact by Bids and Award committee for civil works of the **(Name of Procuring Entity)** if they pool their financial, equipment and technical resources necessary for the above-sated purpose under a Consortium agreement.

NOW THEREFORE, for and consideration of the foregoing promises and mutual covenants hereinafter set forth, the Consortium have agreed to establish, as they hereby establish and constitute by and between themselves, a CONSORTIUM for the exclusive purpose of qualifying for and participating in the foresaid public bidding of the project and actually undertaking the construction work thereof should they successfully win and eventually be awarded the contract, subject to the following terms and conditions:

1. For all intents and proposes, the Consortium entity established hereby, shall be known as **(Name of Consortium).**

2. For communication purposes, all communication/letters shall be addressed at the Consortium's business address at **(Address)**.

3. Mr./Ms. **(Name of nominated AMO)**, is hereby named, appointed and constituted as the Authorized Managing Officer (AMO) and as such, is the sole representative for and behalf of the herein Consortium and all bids, contacts and other documents whatsoever pertinent to said project, shall be signed by her/him.

4. The Parties shall be jointly and severally liable for any and all obligation which the joint venture may incur in relation to the contract which the said Consortium may enter into with the **(Name of Procuring Entity)**.

5. The parties shall be jointly and severally liable for any and all obligation which the Consortium may incur on the basis of **____%** for **(Name of First Party)** and **____%** for **(Name of Second Party)** for all the necessary capital, equipment, technical personnel, management, supervision and other efforts and resources for the proper implementation of the project in the event that the Consortium is awarded the contract for the said project, and further bind themselves at all times during the existence of this Consortium, to extend to each other their respective fullest cooperation and best effort towards the efficient and profitable construction of the project in accordance with the approved plans and specification, and to complete the same within the approve schedule.

6. The net profit or losses of the Consortium shall likewise be divided between the parties on a **___%** and **___%,** respectively.

7. **(Name of Construction Firm)**, the lead partner who will mainly execute the project, provide equipment, technical personnel and management supervision.

8. **(Name of Non-Contractor Firm)**, the non-contractor parties will supply all the materials will be in charge on all documentation, import, testing and finance for all materials and equipment that will be provided.

9. It is hereby agreed and understood that if the herein Consortium fails to qualify for the aforementioned public bidding, or if prequalified, and fails to win the public bidding, that this Agreement shall thereupon cease, terminated and automatically become void and of no further force of effect whatsoever. In the event, the Consortium is awarded the aforementioned contract, then this agreement shall remain in full force and effect as of the date hereof, and until the final completion and acceptance of the contract project by the **(Name of Procuring Entity)**.

IN WITNESS WHEREOF, the parties, hereto have set their hands this, ____day of _____, 20__ at _____, Philippines.

(Name of First Party)	(Name of Second Party)
By:	By:
(Signature)	(Signature)
(Name of AMO/Representative) (Position)	**(Name of AMO/Representative)** (Position)

SIGNED IN THE PRESENCE OF

(signature of witness)	**(signature of witness)**

ACKNOWLEDGMENT

Republic of the Philippines)
City of _____) S.S.

This day personally appeared before me the following:

Name	I.D.#	Date/Place Issued
_____	_____	_____
_____	_____	_____

both known to me as the same persons who executed this foregoing instrument and they acknowledged to me that the same is their own true and voluntary act and deed and the company/firm they respectively represent.

WITNESS MY HAND AND SEAL this _____ day of _____, 20__ at _____, Philippines.

Doc No._____
Page No, _____
Book No. _____
Series of 20__.

JOINT RESOLUTION

WHEREAS, the **(Name of Procuring Entity)** has advertised for public bidding the **(Project Name)**.

WHEREAS, **(Company Name of First Party)** and **(Company Name of Second Party)** both construction firms duly organized and existing under and virtue of the laws of the Republic of the Philippines, are desirous to prequalify and participate in the public bidding for the above-stated project.

NOW, THEREFORE, for and in consideration of the foregoing premises and the mutual covenants hereinafter set forth in a Joint Venture/Consortium Agreement, the parties agree to resolve as they hereby resolved that **(Name of AMO)**, is hereby named, appointed and constituted as Authorized Managing Officer, the sole representative for and behalf of the Joint Venture/Consortium, and all bids, contracts and other documents whatsoever pertinent to said project shall be signed by her.

IN WITNESS WHEREOF, the parties, hereto have set their hands this, ____day of _____, 20__ at _____, Philippines.

(Name of First Party)	(Name of Second Party)
By:	By:
(Signature)	(Signature)
(Name of AMO/Representative) (Position)	**(Name of AMO/Representative)** (Position)

SIGNED IN THE PRESENCE OF

(signature of witness)	**(signature of witness)**

ACKNOWLEDGMENT

Republic of the Philippines)
City of _____) S.S.

This day personally appeared before me the following:

Name	I.D.#	Date/Place Issued
_____	_____	_____
_____	_____	_____

both known to me as the same persons who executed this foregoing instrument and they acknowledged to me that the same is their own true and voluntary act and deed and the company/firm they respectively represent.

WITNESS MY HAND AND SEAL this _____ day of _____, 20__ at _____, Philippines.

Doc No._____
Page No, _____
Book No. _____
Series of 20__.

REPUBLIC OF THE PHILIPPINES)
CITY OF _____) S.S.
x----------x

BID-SECURING DECLARATION
Invitation to Bid:

To: *[Insert name and address of the Procuring Entity]*

I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Bid Security, which may be in the form of a Bid-Securing Declaration.

2. I/We accept that: (a) I/we will be automatically disqualified from bidding for any contract with any procuring entity for a period of two (2) years upon receipt of your Blacklisting Order; and, (b) I/we will pay the applicable fine provided under Section 6 of the Guidelines on the Use of Bid Securing Declaration, within fifteen (15) days from receipt of written demand by the procuring entity for the commission of acts resulting to the enforcement of the bid securing declaration under Sections 23.1(b), 34.2, 40.1 and 69.1, except 69.1 (f), of the IRR of RA 9184; without prejudice to other legal action the government may undertake:

3. I/We understand that this Bid-Securing Declaration shall cease to be valid on the following circumstances:

    (a) Upon expiration of the bid validity period, or any extension thereof pursuant to your request;

    (b) I am/we are declared ineligible or post-disqualified upon receipt of your notice to such effect, and (i) I/we failed to timely file a request for reconsideration or (ii) I/we filed a waiver to avail of said right;

    (c) I am/we are declared as the bidder with the Lowest Calculated Responsive Bid, and I/we have furnished the performance security and signed the Contract.

IN WITNESS WHEREOF, I/We have hereunto set my/our hand/s this ____ day of *[month] [year]* at *[place of execution]*.

[Insert NAME OF BIDDER'S AUTHORIZED REPRESENTATIVE]
[Insert signatory's legal capacity]

Affiant

SUBSCRIBED AND SWORN to before me this __ day of *[month] [year]* at *[place of execution]*, Philippines. Affiant/s is/are personally known to me and was/were identified by me through competent evidence of identity as defined in the 2004 Rules on Notarial Practice (A.M. No. 02-8-13-SC). Affiant/s exhibited to me his/her *[insert type of government identification card used]*, with his/her photograph and signature appearing thereon, with no. _____.

Witness my hand and seal this ___ day of *[month] [year].*

NAME OF NOTARY PUBLIC
Serial No. of Commission _____
Notary Public for _____ until _____
Roll of Attorneys No. _____
PTR No. __, *[date issued], [place issued]*
IBP No. __, *[date issued], [place issued]*
Doc. No. ___
Page No. ___
Book No. ___
Series of ____.

LIST OF KEY PERSONNEL

No.	Name of Nominated Personnel	Nominated Position	Registered Profession	Date of Birth	PRC/Accreditation Number	Highest Educational Attainment	Over-all Work Experience	Number of Projects Undertaking related to installations and maintenance of the network/ system
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

Certified by:

[Signature over printed name of authorized representative]
[Title]
Date

CERTIFICATE OF AVAILABILITY OF KEY PERSONNEL

(***Date of Issuance***)

To: **SBAC-Chairperson**
Bases Conversion and Development Authority
BCDA Corporate Center
2/F Bonifacio Technology Center
31st St. Cor. 2nd Ave. Bonifacio Global City
Taguig City, 1634

In compliance with the requirements of the BCDA Special Bids and Awards Committee for the Procurement of the (***Name of the Project***) ("PROJECT"), we certify that (***Name of the Bidder***) has in its employ the nominated key personnel, as follows:

1. ***(Name of Key Personnel) – Nominated Position***
2. ***(Name of Key Personnel) – Nominated Position***
3. ***(Name of Key Personnel) – Nominated Position***
4. ***(Name of Key Personnel) – Nominated Position***
5. ***(Name of Key Personnel) – Nominated Position***
6. ***(Name of Key Personnel) – Nominated Position***

Very truly yours,

[Signature over Printed Name of Authorized Representative]

[Position]

[Name of Bidder]

LIST OF REQUIRED EQUIPMENT

EQUIPMENT	BRAND/MODEL/TYPE	SERIAL/PLATE/CHASSIS/BODY/PRODUCT IDENTIFICATION/NUMBER	CAPACITY	PROOF OF OWNERSHIP	CONDITION	LOCATION
a. Owned						
b. Under Lease Agreement						
c. Under Purchase Agreement						

Submitted by:

Name of the Authorized Representative of the Bidder
Position
Name of the Bidder

Date: _____

CERTIFICATE OF AVAILABILITY OF EQUIPMENT

(***Date of Issuance***)

To: **SBAC-Chairperson**
Bases Conversion and Development Authority
BCDA Corporate Center
2/F Bonifacio Technology Center
31st St. Cor. 2nd Ave. Bonifacio Global City
Taguig City, 1634

In compliance with the requirements of the BCDA Special Bids and Awards Committee for the Procurement of the (***Name of the Project***) ("PROJECT"), we certify the availability of equipment that (***Name of the Bidder***) owns that may be used for the duration of the Project, as follows:

Very truly yours,

[Signature over Printed Name of Authorized Representative]

[Position]

[Name of Bidder]

CERTIFICATE OF AVAILABILITY OF EQUIPMENT

(***Date of Issuance***)

To: **SBAC-Chairperson**
Bases Conversion and Development Authority
BCDA Corporate Center
2/F Bonifacio Technology Center
31st St. Cor. 2nd Ave. Bonifacio Global City
Taguig City, 1634

In compliance with the requirements of the BCDA Special Bids and Awards Committee for the Procurement of the (***Name of the Project***) ("PROJECT"), we certify the availability of equipment that (***Name of the Bidder***) has under Purchase Agreement that may be used for the duration of the Project, as follows:

Very truly yours,

[Signature over Printed Name of Equipment Vendor]

[Position]

[Name of Bidder]

CERTIFICATE OF AVAILABILITY OF EQUIPMENT

(***Date of Issuance***)

To: **SBAC-Chairperson**
Bases Conversion and Development Authority
BCDA Corporate Center
2/F Bonifacio Technology Center
31st St. Cor. 2nd Ave. Bonifacio Global City
Taguig City, 1634

In compliance with the requirements of the BCDA Special Bids and Awards Committee for the Procurement of the (***Name of the Project***) ("PROJECT"), we certify the availability of equipment that (***Name of the Bidder***) has under lease that may be used for the duration of the Project, as follows:

Very truly yours,

[Signature over Printed Name of Equipment Lessor]

[Position]

[Name of Bidder]

Omnibus Sworn Statement

REPUBLIC OF THE PHILIPPINES)
CITY/MUNICIPALITY OF _____) S.S.

AFFIDAVIT

I, *[Name of Affiant]*, of legal age, *[Civil Status]*, *[Nationality]*, and residing at *[Address of Affiant]*, after having been duly sworn in accordance with law, do hereby depose and state that:

1. ***Select one, delete the other:***

   If a sole proprietorship: I am the sole proprietor or authorized representative of *[Name of Bidder]* with office address at *[address of Bidder]*;

   If a partnership, corporation, cooperative, or joint venture: I am the duly authorized and designated representative of *[Name of Bidder]* with office address at *[address of Bidder]*;

2. ***Select one, delete the other:***

   If a sole proprietorship: As the owner and sole proprietor or authorized representative of *[Name of Bidder]*, I have full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for *[Name of the Project]* of the *[Name of the Procuring Entity] [insert "as shown in the attached duly notarized Special Power of Attorney" for the authorized representative]*;

   If a partnership, corporation, cooperative, or joint venture: I am granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for *[Name of the Project]* of the *[Name of the Procuring Entity]*, accompanied by the duly notarized Special Power of Attorney, Board/Partnership Resolution, or Secretary's Certificate, whichever is applicable;

3. *[Name of Bidder]* is not "blacklisted" or barred from bidding by the Government of the Philippines or any of its agencies, offices, corporations, or Local Government Units, foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the Government Procurement Policy Board;
4. Each of the documents submitted in satisfaction of the bidding requirements is an authentic copy of the original, complete, and all statements and information provided therein are true and correct;
5. *[Name of Bidder]*is authorizing the Head of the Procuring Entity or its duly authorized representative(s) to verify all the documents submitted;

6. ***Select one, delete the rest:***

   If a sole proprietorship: The owner or sole proprietor is not related to the Head of the Procuring Entity, members of the Special Bids and Awards Committee (SBAC), the Technical Working Group, and the SBAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

   If a partnership or cooperative: None of the officers and members of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Special Bids and Awards Committee (SBAC), the Technical Working Group, and the SBAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

   If a corporation or joint venture: None of the officers, directors, and controlling stockholders of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Special Bids and Awards Committee (SBAC), the Technical Working Group, and the SBAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

7. *[Name of Bidder]* complies with existing labor laws and standards; and
8. *[Name of Bidder]* is aware of and has undertaken the following responsibilities as a Bidder:
   a) Carefully examine all of the Bidding Documents;
   b) Acknowledge all conditions, local or otherwise, affecting the implementation of the Contract;
   c) Made an estimate of the facilities available and needed for the contract to be bid, if any; and
   d) Inquire or secure Supplemental/Bid Bulletin(s) issued for the *[Name of the Project]*.
9. *[Name of Bidder]* did not give or pay directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project or activity.

IN WITNESS WHEREOF, I have hereunto set my hand this __ day of ___, 20__ at _____, Philippines.

_____
Bidder's Representative/Authorized Signatory

SUBSCRIBED AND SWORN to before me this ___ day of *[month] [year]* at *[place of execution],* Philippines. Affiant/s is/are personally known to me and was/were identified by me through competent evidence of identity as defined in the 2004 Rules on Notarial Practice (A.M. No. 02-8-13-SC). Affiant/s exhibited to me his/her [insert type of government identification card used], with his/her photograph and signature appearing thereon, with no. _____ and his/her Community Tax Certificate No. _____ issued on ____ at _____.

Witness my hand and seal this ___ day of *[month] [year].*

NAME OF NOTARY PUBLIC
Serial No. of Commission _____
Notary Public for _____ until _____
Roll of Attorneys No. _____
PTR No. __, *[date issued], [place issued]*
IBP No. __, *[date issued], [place issued]*
MCLE No. __

Doc. No. ___
Page No. ___
Book No. ___
Series of ____

SAMPLE FOR REFERENCE ONLY

SUMMARY OF TECHNICAL SPECIFICATIONS
COMPONENT 1: FIBER OPTIC CABLE BUILD

ITEM	COMPLIANCE REQUIREMENTS	COMPLIANCE		REFERENCE POINT
		YES	NO	
Air-Blown 144-Core mini-FOC				
1	**General Description**			
	Supply of 144-core mini-FOC and air-blown into one of the existing and available 16/12mm 7-Way HDPE Microduct of the 250 km Luzon Bypass Infrastructure (LBI)	✓		See Section 1.2 page 5 of the Technical Proposal
2	**Minimum Technical Requirements**			
	Optical Fiber:			
	Consist of 144 cores of single-mode, low loss cut-off shifted fiber (CSF), glass core, glass cladded fibers complying fully with ITU-T Recommendation G.654.A	✓		See Section 3.1 page 8 of the Technical Proposal See attached "Brand" Brochure
	Listed in "Table 1 ITU-T G.654.A Attributes," released 03/2020 are the recommended value tables	✓		See Section 3.2 page 8 of the Technical Proposal
	Supplied and installed with complete accessories and kits	✓		See Section 3.5 page 10 of the Technical Proposal
	Color Coding:			
	Color coding of the loose tubes and the individual fibers must be compliant with TIA 598C	✓		See Section 5 page 30 of the Technical Proposal See attached "Brand" Brochure See attached Cable Data Sheet

SUMMARY OF TECHNICAL SPECIFICATIONS
COMPONENT 1: FIBER OPTIC CABLE BUILD

ITEM	COMPLIANCE REQUIREMENTS	COMPLIANCE		REFERENCE POINT
		YES	NO	
Air-Blown 144-Core mini-FOC				
1	**General Description**			
	Supply of 144-core mini-FOC and air-blown into one of the existing and available 16/12mm 7-Way HDPE Microduct of the 250 km Luzon Bypass Infrastructure (LBI)			
2	**Minimum Technical Requirements**			
	Optical Fiber:			
	Consist of 144 cores of single-mode, low loss cut-off shifted fiber (CSF), glass core, glass cladded fibers complying fully with ITU-T Recommendation G.654.A			
	Listed in "Table 1 ITU-T G.654.A Attributes," released 03/2020 are the recommended value tables			
	Supplied and installed with complete accessories and kits			
	Color Coding:			
	Color coding of the loose tubes and the individual fibers must be compliant with TIA 598C			
	Cable Design:			
	Appropriately designed, manufactured, and packaged so that exposure to the environmental conditions of the Philippines during storage, transport, installation, and operation shall not degrade the physical, transmission, operation, and maintenance characteristics of the cable for thirty (30) years			
	Compact and lightweight and contain high fiber density to maximize the fiber count available in small cable diameter			
	Core Filling Compound:			
	All interstices of the cable core must be filled with a suitable filling compound (jelly-filled) and must be capable of halting the ingress of water to the cable core and the transport of water along with the cable core			
	Loose Tubes:			
	Containment must consist of plastic loose tubes and serve as protection to the optical fibers from axial or radial stresses by allowing free movement of the fibers within the tube			
	Cable Length:			

	Supply of duct and aerial cables in nominal lengths of 2.13 kms, 4.190 kms, or 6.25 kms unless stated otherwise			
	Must state the maximum continuous length of cable that can be delivered			
	Cable Marking:			
	Cables are labelled as follows: Property of DICT Philippines *(Manufacturer's Name & Fiber Count)* *(Date of Manufacture)* *(Length Marker)* *(Fiber Type: SM ITU-T G.654A)*			
	Marked cables are sequentially numbered length markers at regular intervals of one (1) meter			
	Fiber Patch Panels:			
	Standard 19" 1U size			
	Connector type should be LC/UPC			
	Number of Ports must be 144			
	At least six (6) splice cassette/tray accepting up to twenty four (24) fibers per cassette			
	Patch Cords:			
	LC to LC connector, polish type UPC to UPC			
	Fiber type is Single-mode, 9/125um, ITU-T G.652D			
	Fiber count should be Duplex			
	Insertion loss of ≤ 0.5dB			
	Length of 10.0 Meters			
	FOC Pigtail:			
	Should be single mode, 9/125 um			
	Tight buffered, 900 um pigtails, 2m length, 12pcs/bag			
	Standard color compliant with TIA-598C color-code specification			
	Connector should be LC/UPC			
	Optical Joint Enclosure:			
	Watertight optical joint enclosures must be supplied and installed on FOC joints and/or fiber splices			
	Shall be suitable for installation either in manholes, handholes, concrete or steel poles or in cable rooms			
	Suitable for holding and protecting 48 fiber core splices in straight joint and branching applications, must accept a minimum of four (4) mini-FOC cables, and must be designed for air-blown fibers in micro ducts			

	Optical Distribution Frame (ODF):			
	Design, supply, and install 19" rack-mounted optical distribution frames (ODF) at Baler CLS, Sta. Maria RS, and SFLU CLS with a minimum capacity of 144 cores			
	Supplied ODF must be modular, high density, ready for future expansion, with a standard and comprehensive range of accessories, hardware and kits, full front and rear access platform, lightweight frame, and with cable and fiber management			
	Equipped with six (6) 24-port fiber patch panels, LC/UPC, complete with pigtail wires, kits, and accessories			
	Splice Loss Measurement:			
	Should not be above 0.1 dB for fusion splices and connectors must have insertion losses of 0.5 dB or less			
	Maintenance Loop:			
	The maintenance loop must be thirty (30) meters of fiber optic cable at existing manholes located along the route with 1 km interval			
	Additional Compliance:			
	Compliance with cable configuration, member strength, core wrapping, moisture barrier, internal identification, optical fiber primary coating, and other cable composition and layering as detailed in Annex C5			
3	**Scope of Work**			
	Design, supply, and deliver 144 core mini-FOC, complete with hardware and accessories, to the project site to link the two cable landing stations of DICT, located at Baler, Aurora, and San Fernando, La Union.			
	The supply and delivery of 144-core fiber must be air-blown, using a Blowing Machine, to one of the 16mm/12mm diameter microducts with a total length of 250kms. The length per roll/drum of delivery shall be 4.19km.			
	Conduct site validation, site staking, etc. along the 250 km Luzon Bypass Infrastructure as required for the detailed Fiber Optic Cable Build Component: design, work familiarization, hazard assessment, and traffic management plan			
	Perform on-reel cable testing to confirm the manufacturer's tests before the installation operation begins			
	Install maintenance loops at existing manholes along the route			

	Must join/splice the mini-FOCs on a watertight optical joint enclosure and/or patch panels using Splice Machine			
	Splice, terminate, and label the fibers at the Optical Distribution Frames (ODF) and install the ODF at the following equipment node sites: (a) DICT SFLU CLS: California Ave., Brgy San Francisco, San Fernando City, La Union (b) DICT Baler CLS: ATC Compound, Sitio Setan, Calabuan, Baler, Aurora (c) DICT RS3: Brgy. Poblacion, Sta. Maria, Pangasinan			
	Splice fibers following industry standards. During the splicing works, the fiber strand loop with poly-para-phenylene terephthalamide cloth to maintain cleanliness and avoid impurities on the joint.			
	Prior to splicing activities, the contractor must submit the Schematic diagram for fiber optics cores splicing assignment to be reviewed and approved by the DICT			
	Proper termination and labeling of all spliced and unspliced fiber ends in ODF splice trays or optical joint enclosures			
	Test each fiber link for Optical Power Attenuation/Loss Test, Chromatic Dispersion Test, Polar Mode Dispersion Test, and Spectral Attenuation Test with appropriate test equipment and test instruments			
	Provide valid Calibration Certificates for each test equipment/instrument used			
	Conduct final acceptance testing to be witnessed by BCDA and/or DICT nominated personnel			
	Contractor to maintain documents of all specifications and activities for record purposes			
2.1.5Air-Blown 48 Core mini-FOC				
1	**General Description**			
	Supply at least 30 meters of 48-core mini-FOC to be air-blown into one of the 25mm/21// of the eight (8) segment 7-way HDPE microducts, which will serve as maintenance loops at manholes installed 1km apart			
	Total length of FOC per drum of delivery must be 4.19km or 6.25km			
	Splice the dark fibers on watertight optical joint enclosures and must terminate them at the ODF			
2	**Minimum Technical Requirements**			
	Optical Fiber:			

	Consist of 48 cores of single-mode, low loss cut-off shifted fiber (CSF), glass core, glass cladded fibers in full compliance with ITU-T Recommendation G.654.A. Listed in “Table 1 ITU-T G.654.A Attributes,” released 03/2020 are the recommended value tables			
	Must be supplied and installed with complete accessories and kits			
	Color Coding:			
	Color coding of the loose tubes and the individual fibers must be compliant with TIA 598C			
	Cable Design:			
	Appropriately designed, manufactured, and packaged so that exposure to the environmental conditions of the Philippines during storage, transport, installation, and operation shall not degrade the physical, transmission, operation, and maintenance characteristics of the cable for thirty (30) years			
	Compact and lightweight and contain high fiber density to maximize the fiber count available in small cable diameter			
	Core Filling Compound:			
	All interstices of the cable core must be filled with a suitable filling compound (jelly-filled) and must be capable of halting the ingress of water to the cable core and the transport of water along with the cable core			
	Loose Tubes:			
	Containment must consist of plastic loose tubes and serve as protection to the optical fibers from axial or radial stresses by allowing free movement of the fibers within the tube			
	Cable Length:			
	Install thirty (30) meters of maintenance loops at existing manholes located along the route with 1 km interval			
	Supply duct and aerial cables in nominal lengths of 2.13km, 4.190km, or 6.25km unless stated otherwise			
	State the maximum continuous length of cable that can be delivered. Other lengths may be ordered at tender			
	Cable Marking:			
	Cables are labelled as follows: Property of DICT Philippines *(Manufacturer's Name & Fiber Count)* *(Date of Manufacture)* *(Length Marker)* *(Fiber Type: SM ITU-T G.654A)*			

	Marked cables are sequentially numbered length markers at regular intervals of one (1) meter			
	Fiber Patch Panels:			
	Standard 19" 1U size			
	Connector type should be LC/UPC			
	Number of Ports must be 144			
	At least six (6) splice cassette/tray accepting up to twenty four (24) fibers per cassette			
	Patch Cords:			
	LC to LC connector, polish type UPC to UPC			
	Fiber type is Single-mode, 9/125um, ITU-T G.652D			
	Fiber count should be Duplex			
	Insertion loss of ≤ 0.5dB			
	Length of 10.0 Meters			
	FOC Pigtail:			
	Should be single mode, 9/125 um			
	Tight buffered, 900 um pigtails, 2m length, 12pcs/bag			
	Standard color compliant with TIA-598C color-code specification			
	Connector should be LC/UPC			
	Optical Joint Enclosure:			
	Watertight optical joint enclosures must be supplied and installed on FOC joints and/or fiber splices			
	Shall be suitable for installation either in manholes, handholes, concrete or steel poles or in cable rooms			
	Suitable for holding and protecting 48 fiber core splices in straight joint and branching applications, must accept a minimum of four (4) mini-FOC cables, and must be designed for air-blown fibers in micro ducts			
	Optical Distribution Frame:			
	Design, supply, and install 19” rack-mounted optical distribution frames (ODF) at the project sites listed below with a minimum capacity of 48 cores			
	Must be modular, high density, ready for future expansion, with a standard and comprehensive range of accessories, hardware and kits, full front and rear access platform, lightweight frame, and with cable and fiber management			
	Equipped with two (2) 24port fiber patch panels, LC/UPC, complete with pigtail wires, kits, and accessories			

	Supply and install ODFs at the following sites: -BCDA SFLU Poro Point Management Corporation -BCDA Baguio Camp John Hay -BCDA National Government Administrative Center -BCDA Clark Freeport Zone -NGCP Bacnotan -NGCP Bantay -NGCP Laoag -NGCP San Esteban -NGCP Cabanatuan -NGCP Concepcion -NGCP La Trinidad -NGCP Clark -NGCP Bauang -NGCP Subic -NGCP Araneta -NGCP Balingueo -NGCP Mexico -NGCP Hermosa -NGCP Olongapo -NGCP San Jose -DICT SFLU_CLS -DICT NGDC3 -DICT Roces -DICT Baguio PoP			
	Additional Compliance:			
	Compliance with cable configuration, member strength, core wrapping, moisture barrier, internal identification, optical fiber primary coating, and other cable composition and layering as detailed in Annex C5 - FOC Build Price Template			
3	**Scope of Work:**			
	Design, supply, and deliver 48core mini-FOC complete with hardware and accessories to the project sites. The length per roll/drum of delivery shall be 4.19km			
	Conduct site validation, site staking, etc. along the eight (8) segments of the FOC Build route as required for the detailed design, work familiarization, hazard assessment, and traffic management plan			
	Perform on-reel cable testing to confirm the manufacturer’s tests before the installation operation begins			
	Install thirty (30) meters of maintenance loops at every manhole along the fiber route installed 1km apart			

	Join/splice the mini-FOCs on watertight optical joint enclosures and/or patch panels using Splice Machine. Splice loss measurement must not be above 0.1 dB for fusion splices and connectors must have insertion losses of 0.5 dB or less			
	Blow, splice, and terminate the 48core cable from ODF to the optical joint enclosure installed at the service manhole of the following equipment node locations: -NGCP Bacnotan -NGCP Balingueo -NGCP Mexico -NGCP Hermosa -NGCP Olongapo -NGCP San Jose -NGCP San Esteban -NGCP Bantay -NGCP Laoag -NGCP Cabanatuan			
	Test each fiber link for Optical Power Attenuation/Loss Test, Chromatic Dispersion Test, Polar Mode Dispersion Test, and Spectral Attenuation Test with appropriate test equipment and test instruments			
	Provide valid Calibration Certificates for each test equipment/instrument used			
	Conduct final acceptance testing to be witnessed by BCDA and/or DICT nominated personnel			
	Contractor to maintain documents of all specifications and activities for record purposes			
7-Way HDPE Microduct				
Microducts:				
1	**General Description:**			
	Construct the eight (8) fiber optic cable route underground segments with 7-Way HDPE Micro ducts, twenty-six (26) cable entrance facilities, manholes, handholes, and telecommunication poles			
	Length of the 7-Way Micro ducts per drum of delivery must be 1000m			
2	**Minimum Technical Requirements**			
	General Requirements:			
	Should be suitable for installation of air-blown mini-FOCs			
	All micro ducts stubs must be properly capped to prevent water, mud, dirt, and foreign material ingress			
	Assemblies of micro ducts must have a thick outer sheath of HDPE that is easily removed when splicing or branching			

	Materials:			
	Must be made of high-density polyethylene (HDPE) and have a low friction inner surface for best blowing performance			
	Temperature Range to EN 60794-1-22-F1: Installation: -10°C to +50°C, Operation: -40°C to +70°C, Storage -40°C to +70°C			
	Outer diameter (OD): 25 ± 0.3 mm			
	Inner diameter (ID): 21 ± 0.3 mm			
	Ovality: max. 5%			
	Inner coefficient of friction: max. 0.1			
	Visual examination: free from defects			
	Crush resistance: min. 1500 kPa			
	Impact strength: no cracks, impact energy 132J, -18° C, 10 samples			
	Thermal expansion: *1.6*10-4 K-1 ISO 11359-2 (-20°C to +70°C)			
	Longitudinal reversion: max. 3% ČSN EN ISO 2505			
	Weight: 140 kg/km			
	Installation tensile force: max. 2500N			
	Minimum bending radius: 250 mm			
	Blowing pressure max.: 10 bar			
	Wall thickness (WT): min. 2.0 mm			
	Color-coding: TIA-598C			
	7-Way micro duct assembly arrangement: Center Microduct – Blue, Outer Six (6) Micro ducts – arranged sequentially clockwise as Orange, Green, Brown, Slate, White, and Red.			
	Outer sheath thickness: 3.0 mm HDPE			
	Outer sheath color: Orange			
	Hardware and Accessories:			
	Must have appropriate hardware and accessories for a watertight installation of the eight (8) segments of the 7-Way HDPE Micro ducts			
	Cable Entrance Facilities (CEF):			
	General Requirements:			
	Must be constructed within the property line to accommodate the entrance and termination of FOC to the ODF of the project site's equipment room . The 7-Way Micro ducts are connected from the service manhole to the entrance ducts of the cable room and terminating to the ODF of the equipment room via indoor cable trays and ladders			
	Service Manholes:			
	Must be constructed adjacent to the property line of BCDA, NGCP, or DICT			

	Development of plan and section view drawings of service manholes must be similar to the specifications of manholes as shown in Annex C			
	Service Entrance Conduits:			
	The 7-Way Micro ducts must be installed, laid, and terminated from the ports of the service manhole to the ports of the entrance ducts of the cable room			
	Handholes:			
	Handhole/s between the service manhole and entrance ducts are required especially for 90-degree bends			
	Compliance with specifications as detailed in Annex C			
	Earthing System:			
	Earthing system at project sites must be designed, supplied and installed following the grounding recommendations of the Philippine Electrical Code			
	Maximum earthing resistance requirement from the main busbar is five (5) ohms. The three-point method or fall off potential testing is adopted for measuring resistance to earth or follow the IEEE Standard 81: Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Grounding System			
	Hardware and Accessories:			
	Install plastic bushings on all spare parts of the service manholes, handholes, and entrance ducts while micro duct plugs shall be properly capped on each of the seven (7) micro ducts stub ends to prevent water, mud, and dirt ingress			
	Cable ladders and cable trays must be 3-8 mils thickened galvanized steel and installed from the entrance ducts of the cable room to the optical distribution frame of the equipment room			
	Cable ladders and cable trays must be earthed via ground busbars with maximum resistance to earth of five (5) ohms			
	Manholes, Handholes and Telecommunication Poles:			
	General Requirements:			
	Made of reinforced concrete structure (load-bearing type) constructed at the fabrication site following the plan and section drawings specified on Annex C			
	Strength of the manhole, handhole, and telecommunication pole must be sufficient for the intended use and shall conform to ASTM C478, and ASTM A615 Grade 60			
	Contractor to include in its deliverables the Structural calculations and detailed design drawings for validation of the strength of each size of manhole, handhole, and telecommunications pole; For Type Approval			
	Hardware and Accessories:			

	Manhole and handhole are fully equipped with the full complement of hardware and accessories such as pulling eyes, ladder, ladder support, cable brackets, earthing system, cover, etc,			
	Telecommunication poles shall be fully equipped with pole hardware, 4” dia. Schedule 40 GI Pipe, Steel U-Guard, etc.			
3	**Scope of Work:**			
	Conduct site survey, FOC Build route validation, soil investigation, site staking, and other pre-construction works along the eight (8) FOC Build routes and twenty-six (26) cable entrance facilities as required for the detailed design, work familiarization, hazard assessment, and traffic management plan.			
	Provide to the DICT all prerequisites, requirements, and essential in securing the appropriate permits			
	In coordination with the DICT, secure the necessary right-of-way (ROW) and permits in the name of DICT or such proper entity as may be allowed			
	Contractor to handle all ROW and permit requirements including processing of documents, conduct of consultations, submission of reports, and payment of fees, and similar tasks. These shall include permits from DPWH, DENR, LGUs, SUDECO, MACEA, etc. (application or renewal, whichever is applicable), access/gate pass from DICT, BCDA, NGCP, etc. and licences to undertake the work necessary for the execution of the FOC Build			
	Declaration that the contractor shall abide and comply with the terms and conditions specified in the permits, access/gate pass, licenses obtained from said authorities, agencies, and entities			
	Design, supply, deliver, haul reels of 7-Way HDPE micro ducts, manholes, handholes, and telecommunication poles complete with their respective hardware, kits, and accessories to the project site			
	Install the 7-Way HDPE Microduct assembly along the eight (8) FOC Build routes based on the Direct Buried Installation approach and must build a cable entrance facility (CEF) at the twenty-six (26) project sites as defined in Section 2.1.6.3.14 of the Terms of Reference			
	For Direct Buried Installations, Contractor must utilize the appropriate equipment and machinery for test pits, excavation, trenching, laying of micro ducts, placement of warning tapes, compaction, and restoration work. Install the micro ducts at a 1.2-meter depth trench			
	For Shallow Trench (reinforced concrete) Installations, Contractor must utilize the appropriate equipment and machinery for test pits, excavation, trenching, laying of conduits, compaction, and restoration works. Install the micro ducts encased with reinforced concrete as protection			
	For FOC Laying Works at City proper, road/railroad crossings, concrete road shoulder, in front of business establishments, bridge crossings, ditches/flood canals, and other roads where open trenches are not allowed or restricted by the LGU, DPWH, and other agencies, organizations, and associations, the Contractor must protect the micro ducts with a single-run 4” diameter PVC/HDPE pipe and use of HDD machine for installation			

	For Bridge and Culvert Attachment, the Contractor must encase the micro ducts with a seamless, Schedule 40, 4" diameter G.I. pipe. Must use galvanized steel hangers, painting works, appropriate equipment, and machinery, and other necessary bridge or culvert approach, rip-rap, and restoration activities to complete the installation works			
	For Manhole Installation the Contractor must install manholes on approved utility corridors complete with hardware and accessories. Should keep the duct ports watertight to minimize the ingress of water, mud, and dirt into the conduits			
	For Handhole Installation, the Contractor must install handholes at 90 degree bends inside the property line. Must plug the ports with appropriate plastic caps to prevent the ingress of water, mud, and dirt into the conduits			
	For Telecommunication Pole Installations, the Contrctor must install one (1) ten (10) meter telecommunication pole at road sidewalk (open spaces allowed by LGUs and DPWH) nearest to the project site's service manhole (SMH), and one (1) GI pipe 4" diameter, Schedule 40, 3 meter GI Pipe. Must securely install and fasten the pipe into the telecom pole. Install an underground 4" PVC/HDPE telecom pipe connecting the SMH and the pipe. Pipe ends must be securely plugged/capped to prevent the ingress of water, mud, and dirt. The installation sites are as follows: -NGCP Bacnotan -NGCP Balingueo -NGCP Mexico -NGCP Hermosa -NGCP San Jose -NGCP Olongapo -NGCP San Esteban -NGCP Bantay -NGCP Laoag -NGCP Cabanatuan -DICT SFLU_CLS -DICT Baler CLS			

	For Cable Entrance Facilities, the Contractor must include the construction of cable entrance facility at the following twenty-six (26) project sites: -BCDA Baguio Camp John Hay -BCDA SFLU Poro Point Management Corporation -BCDA National Government Administrative Center -BCDA Clark Freeport Zone -NGCP Bolo -NGCP Nagsaag -NGCP Bacnotan -NGCP San Esteban -NGCP Bantay -NGCP Laoag -NGCP Cabanatuan -NGCP Concepción -NGCP La Trinidad -NGCP Clark -NGCP Bauang -NGCP Araneta -NGCP Balingueo -NGCP Mexico -NGCP Hermosa -NGCP Olongapo -NGCP San Jose -DICT Baler CLS -DICT La Union CLS -DICT NGDC3 -DICT Roces -DICT Baguio PoP			
Optical Test Equipment:				
1	**General Requirement:**			
	Optical Test Equipment to be supplied and delivered to DICT and/or BCDA nominated office/site.			
2	**Minimum Technical Requirements:**			
	Optical Time-Domain Reflectometer (OTDR):			
	Must be all-in-one built-in OTDR, Light Source, Optical Power Meter, and Visible Light Source			

	Must have Fiber Visualizer display graphical summary of fiber status and Pass/Fail results			
	Capable of actual trace event displayed with the ability to quickly switch between the Trace view and Visualizer view			
	With OTDR Range of at least 100-250km			
	Supports Single Mode fiber 1310 nm/1550 nm/1625 nm wavelengths			
	Capable of User replaceable OTDR and Power Meter ports (FC/UPC, SC/UPC, ST/UPC and LC/UPC) connectors			
	Must have USB Ports for data transfer/remote control, memory stick, and printer			
	All-in-one unit Optical Power Meter (OPM) and Optical Light Source (OLS)			
	Must supports Single Mode (SM) [1310 nm/1550 nm] and Multi-Mode (MM) [850 nm/1300 nm] fiber			
	Should be Compact and lightweight			
	Able to Measure +23 dBm maximum optical power			
	Battery (dry cell) operation			
	Connector type: User replaceable (FC/UPC, SC/UPC, ST/UPC and LC/UPC) connectors			
3	**Scope of Work:**			
	Must supply, deliver, and transfer ownership of two (2) units of OTDR and two (2) units of All-In-One OPM/OLS test instruments to DICT NBP at Judge Juan Luna DICT Office, Quezon City			
	Shall include the instrument's Warranty Certificates and Calibration Certificates on the delivery			
Spare Deliverables:				
1	**Minimum Requirements:**			
	Spares to be delivered to DICT desgnated site or warehouse			
2	**Spares List:**			
	1 drum of 48 cores, mini-FOC, SM, 1550nm, air-blown fiber, ITU-T G.654A, 4.19km/drum			
	3 Drums of 144 cores, mini-FOC, SM, 1550nm, air-blown fiber, ITU-T G.654A, 4.19 km/drum			
	6 Set of Fiber Optic Joint Enclosure, 48F, horizontal, underground applications, watertight, with kits and accessories			
	50 pcs of Patch Cords (LC/LC), UPC, 3m length, 2mm diameter			
	50 pcs of Pigtails (SM) – LC/UPC Connector			
	1 drum of Underground HDPE 7-Way Microduct, 1km/drum, with kits and accessories			
	12 sets of Fiber Optic Joint Enclosure, 144F, horizontal, underground applications, watertight, with kits and accessories			

3	**Scope of Work:**			
	Shall provision for sufficient in-country pool of spares for Spare Parts exchange within twenty-four (24) hours in times of non-availability of Spare Parts at DICT side due to non-repair or non-arrival of repaired equipment at DICT's premises			
	Must be transported to DICT designated sites or warehouses after delivery acceptance			

SUMMARY OF TECHNICAL SPECIFICATIONS
COMPONENT 2: TRANSPONDER/MUXPONDER SYSTEM

ITEM	COMPLIANCE REQUIREMENTS	COMPLIANCE		REFERENCE POINT
		YES	NO	
Transponder/Muxponder System				
1	**Minimum Technical Requirements:**			
	System must comply with the International Telecommunication Union Telecom Sector (ITU-T), and Manufacturers Best Practices Standard, such as: -ITU-T Rec.G.652 Characteristics of a single-mode optical fiber and cable -ITU-T Rec.G.655 Characteristics of a non-zero optical fiber and cable -ITU-T Rec. G.709 Interfaces for the optical transport network (OTN) -ITU-T Rec. G.783 (Optical Safety procedures and requirements for Optical Transport System			
	Equipment must support redundant / field-replaceable power supply and fan units and traffic interface cards			
	Able to support C – Band with a minimum line rate of 100Gb/s and reach up to 14,000 km.			
	Transponder/Muxponder module is abe to support up to eight (8) QSFP28 ports of 100Gb/s client interfaces per slot			
	Wavelengths equipment conforms to the specifications as defined in Annex E			
2	**Scope of Work:**			
	Conduct joint site surveys with DICT Project Management Team representative(s) in Baler, Aurora, and San Fernando, La Union Cable Landing Station, Equinix LA4 Data Center in L.A. USA, and DICT Roces in Quezon City			
	Submit design proposals based on the result of the site surveys for end-user review, comments, and revisions request prior to design approval			
	Provide technical documents, detailed network design, method of procedure, technical specifications, and other related documentation			
	Contractor along with DICT representatives to witness and perform Factory Acceptance Test (FAT), Pre-inspection delivery and on-site delivery inventory of the transponder/muxponder, complete lists of installation accessories at no cost to DICT and/or BCDA			
	Propose an alternative FAT procedure, subject to DICT approval, in the event where travelling may not be possible due to the ongoing pandemic and/or other circumstances where travelling is restricted. Such may apply to onshore or offshore inspection delivery of materials on site, acceptance, other project implementation requirements (as applicable) and support activities			

	Delivery, installation, power-up, commissioning, acceptance, and integration to be approved by DICT Project Management Team for all transponder/muxponder system, its materials, and installation accessories in Equinix LA4, Data Center, Baler, and San Fernando Cable Landing Stations in the Philippines at no cost to DICT. Contractor to replace and shoulder any missing or incomplete lists of materials at no cost from DICT and/or BCDA			
	Supply, provision, and termination of patch cords/pigtails and other interconnections from EDGE SLTE equipment room to Transponder/Muxponder equipment room through the meet me room			
	Install cross-connects in San Fernando and Baler Cable Landing Stations in the Philippines and Equinix LA4 Data Center in California, USA between Transponder / Muxponder line interface card to EDGE CCMD12 cards and other connectivity requirements to activate a working transponder / Muxponder System			
	Install fiber cable trays, ladders, and spooler from SLTE equipment room to Transponder/Muxponder equipment room at Equinix LA4 Data Center, Baler, and San Fernando Cable Landing Stations in the Philippines			
	Install Optical Distribution Frame (ODF), Cabinet or Racks, for Transponder/Muxponder equipment client interfaces on all stations			
	Contractor to ensure proper cable installation, grounding, equipment labeling, and grooming to be approved and inspected by the end-user during the acceptance tests			
	Contractor to ensure a working transponder / muxponder links between Equinix LA4 Data Center, USA, Baler, and San Fernando Cable Landing Stations in the Philippines by performing, traffic provisioning, local node testing, link testing, stability test, and other additional testing procedure that will be required by the end-user			
Power System:				
1	**Minimum Technical Requirements:**			
	Submit a proposed working rectifier design system, according but not limited to AC Supply, Battery Charging, Control and Monitoring, Temperature Control, Low Voltage Disconnect, Battery Protection, Load Distribution, System Sizing, and other parameter requirements to the end-user for review and approval			
	Main and redundant power systems should support a DC output range of -40 Vdc to -72 Vdc at San Fernando and Baler Cable Landing Stations, and Repeater Station in Sta, Maria, Pangasinan for Transponder/Muxponder System, DWDM Systems and other peripheral devices on this project			
	Supply a power system that can support future expansion of the DICT Transponder System at a minimum of 2Tbps hardware configuration set-up, and a minimum DWDM power load of four (4) kilowatts at San Fernando, Baler Cable Landing Station, and Sta. Maria Repeater Station			
	AC input terminal should be equipped with surge protection devices to meet the requirement of Class-C surge protection. AC input of either 220V single phase or 110V dual wire. AC input voltage range is 100V – 264V			
2	**Scope of Works:**			

	Shall perform power tapping of Transponder/Muxponder, DWDM Equipment for Main and redundant rectifier system at (1) San Fernando and (2) Baler Cable Landing Stations and (3) Sta. Maria Repeater Station			
	Provide technical documents, detailed network design, method of procedure, technical specifications, and other related documentation			
	Shall be responsible for transporting, installing, and commissioning the Power System on all sites			
Network Management System (NMS):				
1	**Minimum Technical Requirements:**			
	Provide the NMS to monitor the transponder / muxponder system with the minimum technical specifications and functions below: -Web browser-based thin client -Rich visualization using HTML 5 and the latest UX/UI tech -PM collection & viewing -NE backup and restore operation -Software and Hardware inventory option -Alarm and PM Management / Co-relation -Single Sign-On and Centralized User Management -5 levels of user rights for NE and NMS Server			
	Supply and install NMS Server/s with Intel 2.3Ghz 16 Core. 64GB Memory, 3x 800GB SSD CPU			
	Supply and install flat or curved monitor with a minimum aspect ratio of 16:9, DisplayPort, or DMI, or USB-C			
2	**Scope of Work:**			
	Perform hardware and software installation and commissioning of NMS Main Server in Baler Aurora CLS and Client Desktop Application in DICT Roces in Quezon City. Installation of Remote Operator NMS workstation in Baler CLS and DICT Data Roces in Quezon City for provisioning, fault detection, and management of the network elements			
	Install client software applications to operations team laptops for mobile or remote monitoring of the system			
	Should the transponder/muxponder and DWDM are of the same brand, the monitoring will be integrated to the DWDM NMS with all the necessary licenses to maintain, operate, and perform remote activities on the transponder/muxponder. It should create a single monitoring system for both transponder/muxponder and DWDM of the same brand			
Data Communication Network:				
1	**Minimum Technical Requirements:**			

	Provide DCN network design that comprise the Out of Band connectivity of the data communications network routers, located at Equinix LA4, Data Center USA, Baler and San Fernando Cable Landing Station in the Philippines The Internal DCN must provide the connectivity between the Gateway Network Elements (GNE's), subtended Network Elements (NE's) and between SFLU and Baler Cable Landing Stations, and Equinix LA4. The DCN must be part of the Network Management System of the DICT Transponder/Muxponder System			
	Provide all the hardware and necessary software required to realize the outband DCN connectivity requirement including the internet subscription			
	Contractor to submit the hardware and software configuration network build and design			
2	**Scope of Work:**			
	Ensure a working data communication network that will manage DICT Transponder / Muxponder equipment installed at Equinix LA4 Data Center in California USA, Baler and San Fernando Cable Landing Station in the Philippines			
	Supply all necessary hardware and software for the installation, commissioning, and configuration of DCN routers for Out-of-band DCN of Transponder / Muxponder NMS at Baler and San Fernando Cable Landing Station in the Philippines, and Equinix LA4 Data Center in California USA			
	Install and connect LAN cables from Transponder/Muxponder management port to DCN routers			
	Perform the configuration of DCN Routers, Transponder / Muxponder settings to realize the Network Management System connectivity			
	Provide an internet service in Equinix LA4 as part of the DCN requirement to realize the configuration of the transponder network visibility scope			
Test Equipment Sets:				
1	**Minimum Technical Requirements:**			
	Provide two (2) units of Optical Time-Domain Reflectometer (OTDR) test set with the following specifications: -Supports Single Mode (SM) [1310 nm/1550 nm] and Multi-Mode (MM) [850 nm/1300 nm] fiber -Must be compact and lightweight -Measures +23 dBm maximum optical power -Battery (dry cell) operation -Connector type: User-replaceable (FC/PC, SC/PC, ST/PC and LC/PC) connectors			

	Provide two (2) units of Optical Power Meter (OPM) test set with the following specifications: -Supports Single Mode (SM) [1310 nm/1550 nm] and Multi-Mode (MM) [850 nm/1300 nm] fiber -Must be compact and lightweight -Battery (dry cell) operation -Connector type: User-replaceable (FC/PC, SC/PC, ST/PC and LC/PC) connectors			
	Provide two (2) units of Optical Light Source (OLS) test set with the following specifications: -Supports Single Mode (SM) [1310 nm/1550 nm] and Multi-Mode (MM) [850 nm/1300 nm] fiber -Must be compact and lightweight -Battery (dry cell) operation -Connector type: User-replaceable (FC/PC, SC/PC, ST/PC and LC/PC) connectors			
2	**Scope of Work:**			
	Contractor shall be responsible for the supply, delivery, and other logistical requirements including transfer of ownership of the test equipment to be handed over to the end-user			
	Ensure that all test equipment software versions are up to date. Contractor to perform all necessary software updating at no cost to the end-user			
	Demonstrate functional tests requirements of the test equipment based on end-user approved acceptance test protocols			
Subscription to One (1) Year Transponder/Muxponder, DCN Router Equipment Power, Internet for DCN Utilization Cost, and Remote Hand Support				
1	**Minimum Technical Requirements:**			
	DICT Transponder/Muxponder, DCN Router System Remote Hand Support agreement at Equinix Data Center in LA, CA, USA must have a minimum of three hundred sixty (360) hours within the year related to the operation and maintenance, project implementations, or other activities required by end-user			
	Minimum of 2KVA of Power and 1- Rack space requirement, cross-connects required to realize a working Transponder/ Muxponder system in Equinix LA4 Data Center in the USA			
	1-year subscription of the internet with a minimum bandwidth of 5Mbps for the out of band management or Data Connection Network (DCN) configuration for the Transponder/Muxponder Equipment at Equinix Data Center in Los Angeles California USA			
2	**Scope of Work:**			
	Contractor to be responsible for all the required subscription and lease costs (One Time Cost, Monthly Recurring Costs) to facilitate the successful delivery, installation, power-up, commissioning, integration, and test of the Transponder/Muxponder to EDGE Submarine Line Terminal Equipment at Equinix LA4 Data Center USA			

	Contractor to be responsible for the power consumption costs, cross-connect, and port charges costs that will be incurred within the data center facilities during the project implementation to interconnect the transponder to other equipment based on the submitted project design and as approved by the end-user			
	Assign a Single Point of Contact (SPOC) for all the project and Operations and Maintenance Operations for all the facilities under the Remote hand maintenance scope			
	Provide Remote Hand Support for all project, operations, and maintenance activities of the end-user			
Spares Deliverables:				
1	**Minimum Technical Requirements:**			
	Provide field-replaceable cards, modules which include chassis, power modules, fan units, transponder daughter cards			
	Provide Power Cords, 1 each for SFLU, Baler and Equinix			
	Provide 4X25G, WDM, SMF, 1310NM, 10 KM QSFP28 / QSFP28-LR4 100GBASE-LR4 QSFP28 1310nm 10km, 1 each for SFLU, Baler and Equinix			
	Provide 2X400G 35/56GBAUD EDFA C-Band 8XQSFP28 Module, 1 each for SLFU and Baler			
	Provide 2X400G 35/56GBAUD EDFA C-Band 8XQSFP28 Module, 1 each for Baler and Equinix			
	Provide -48 VDC POWER MODULE, 1 each for SFLU and Baler			
	Provide Transponder Chassis Power Modules, CTRL, Fan Modules, 1 set each for SFLU, Baler and Equinix			
	Provide Base Software Licenses, 1 set each for SLFU, Baler and Equinix			
	Provide 1 set of Brackets to Equinix			
	Provide 1 set of installation kitsto Equinix			
	Provide Other control subsystems, access panels, and peripherals, 1 set each for SFLU, Baler and Equinix			
	Provide LC-LC Optical Patch Cords 10M SM/MM 1310nm, 20 pcs each for SFLU, Baler and Equinix			
	Provide LC-LC Optical Patch Cords 20M SM/MM 1310nm, 20 pcs each for SFLU, Baler and Equinix			
	Provide LC-LC Optical Patch Cords 30M SM/MM 1310nm, 20 pcs each for SFLU, Baler and Equinix			
	Provide LC Optical Attenuators 1dB SM/MM 1310nm, 50 pcs each for SFLU, Baler and Equinix			
	Provide LC Optical Attenuators 3dB, 50 pcs each for SFLU, Baler and Equinix			
	Provide LC Optical Attenuators 6dB, 50 pcs each for SFLU, Baler and Equinix			
	Provide LC Optical Attenuators 10]dB, 50 pcs each for SFLU, Baler and Equinix			
	Provide Fused 2x2 LC - LC Couplers, 30 pcs each for SFLU, Baler and Equinix			

	Provide Rectifier Module, 1 pc each for SFLU, Baler and Sta Maria RS			
	Provide Slot Fillers, 1 pc each for SFLU, Baler and Sta Maria RS			
	Provide Other peripherals required to maintain the rectifier system, 1 pc each for SFLU, Baler and Sta Maria RS			
2	**Scope of Work:**			
	Hand over the spares to the end-user at Baler Aurora and San Fernando CLS			
	Secure the Transponder / Muxponder System spares at Equinix LA4 Data Center and must be securely mounted at the cabinet/rack which will be installed during the project implementation			
	Provision of sufficient in-country pool of spares for spare parts exchange within twenty-four (24) hours in times of non-availability of Spare Parts at the DICT side due to non-repair or non-arrival of repaired equipment at DICT's premises			
	Provide other spares required that may arise during the project implementation and warranty support period to maintain DICT's high network availability period during the specific network outage			
	Declaration that the contractor shall replace any defects or materials found to be faulty at no cost to DICT			
	Hand over all approved spares to DICT on or before the Final Acceptance Testing of the transponder system			

SUMMARY OF TECHNICAL SPECIFICATIONS
COMPONENT 3: OPTICAL TRANSPORT NETWORK

ITEM	COMPLIANCE REQUIREMENTS	COMPLIANCE		REFERENCE POINT
		YES	NO	
DWDM/ROADM Broadband Communication System:				
1	**Minimum Technical Requirements:**			
	Equipped with additional 200 Gbps of spectral capacity between DICT Roces and DICT NGDC3			
	Must have 10GE/o add/drop at the DWDM/ROADM nodes and must be scalable up to 10x10GE/o			
	SFLU CLS DWDM/ROADM node equipped to support an initial interconnection speed of 700 Gbps and scalable to a minimum of 2,000 Gbps			
	600 Gbps of spectral capacity must be equipped from SFLU CLS to Concepcion and must branch out to 100 Gbps Clark, 50 Gbps each to Bataan, La Trinidad, DICT Roces, and SFLU CLS. All these branches or spokes must be equipped respectively with these speeds			
	Power requirement to serve the initial capacity of the network. The expected growth rate is 10-20% per annum			
	Supports Flex Grid functionality and installed or enabled in Phase 1 implementation			
	Supports a hitless upgrade to CDF (Colorless, Directionless, Flexible Grid) functionality. Upgrading of the System to CDF must not disrupt any existing services nor introduce changes to any existing interfaces in operation, nor require a forklift upgrade			
	Supports upgrade to Contentionless functionality			
	System to support modular, flexible architecture, and converged platforms to allow scaling of equipment following the network requirements			
	All traffic affecting common equipment must be redundant			
	Supports line protection and client protection			
	System control and power supply must support 1+1 hot standby protection			
	Equipment delivery shall be based on the approved network design of DWDM/ROADM and Amplifier System including installation materials, required peripherals, and other ancillary materials/facilities			
	DWDM/ROADM interoperability with existing NMS of DICT			
2	**Scope of Work:**			
	Conduct site surveys/validation of 23 NGCP Substations and 5 DICT sites required for the detailed design, all following the International Telecommunications Union Telecommunication Sector (ITU-T) and best practices, subject to the terms and conditions of the Contract and applicable provisions of Republic Act (RA) 9184 and its Revised Implementing Rules and Regulations (IRR)			
	Completion of site validation and detailed network design and other necessary tasks within forty-five (45) calendar days upon receipt of Notice to Proceed (NTP)			

	Deliver the equipment, materials, and ancillaries from the Contractor's warehouse to designated NGCP and DICT installation sites. The cost of delivery of installation equipment to installation sites to be shouldered by the Contractor			
	Provide hard and soft copies of the technical documents, detailed network design, method of procedure, technical specifications, and other related documentation			
	Secure required permits and type approval certificates from the National Telecommunications Commission and other related permits/clearances (application or renewal, whichever is applicable).			
	Supply, deliver, install, test, and commission the DWDM/ROADM and Optical Amplifier equipment, materials, and its ancillaries			
	Contractor to establish a 1x100Gbps link between DICT Roces node and DICT NGDC1 Diliman node, following the details as stated in Annex B10-Section 4			
Support Facilities, Materials and Services:				
1	**Minimum Technical Requirements:**			
	Power System:			
	The power system should support AC input of either 220/380V three-phase, 220V single phase, or 110V dual wire. The input voltage range is 85V – 300V.			
	DC Power System: The DC power system must be modular, telecommunications industry-grade, long service life, an upgradeable system of Battery Banks and Rectifier, can deliver 1000 ampere-hour of -48VC.			
	The Generator Sets: The generator set must be four-stroke, water-cooled engine, three-phase, environment friendly, full outdoor type, compact structure, silent operation, configurable to run/operate in parallel or alternate mode, will operate within 30 seconds of commercial power failure			
	Air-Conditioning Units:			
	Must be a 5-ton floor standing air conditioning system with controller for simultaneous or alternate operations . The controller must be programmable, with a room-temperature sensor, and shows the current settings of the ACUs in an easy to read display			
	Ancillaries:			
	AC and DC Breakers, Load Lines, Grounding System, Lightning Arrester, Surge Arresters, Cable Ladders and Trays, Electrical Wires/Cables, DC power distribution board (DCPDB) and other associated components, hardware, ancillary materials of the AC/DC power system needed for the completion of the project			
	AC input terminal is equipped with surge protection devices to meet the requirement of class-C surge protection			
	System should have 2 levels of low voltage disconnection function (including Load Low Voltage (LLVD) and Battery Low Voltage (BLVD)			

	System is capable of monitoring and controlling the AC voltage, current, DC voltage and load current, ambient temperature and humidity, and battery current and temperature for the power system, and equipped with LCD and Web UI for information viewing			
	The power system should have the function of battery equalized charging and float charging management, including manual and automatic conversion during battery equalize charging or float charging state			
	System is able to respond to a failure of the utility service by starting and paralleling the specified number of generators to restore power to the facility			
	System is able to respond to the failure of a generator by shedding selected loads and restoring normal operation to the extent possible within the capacity of the available source (s)			
	System is able to perform a closed transition soft-load power transfer between operating generators and the utility supply once the utility power source has been restored			
	System is able to perform a closed transition soft-load power transfer between the utility power source and selected generators when performing a system load test			
2	**Scope of Work:**			
	Supply, design, build, install, and commission a modular, and operable power generation system at DICT Roces equipment node. i.e. AC and DC power and power backup system			
	Install two (2) units of 80KVA, at a minimum, outdoor type Generator Sets (Gensets) at DICT Roces			
	Supply, design, build, install, and commission a modular and operable 48VDC power system at the NGDC3 equipment node			
	Perform sizing of the rectifier system to fully charge and administer the 1000AH battery banks and provide DC power to the offered DWDM solution at DICT Roces and DICT NGDC3 sites on protected 5-Tera, 10-Tera, and 15-Tera optical switching capacity of the DWDM			
	Design, supply, and install a dual supply DC distribution panel (DCDP) each on the 42RU equipment ETSI racks of the twenty-five (20) (25) DWDM/ROADM and ILA			
	AC and DC power and power backup systems are available at all NGCP sites. AC and/or DC circuit breakers and DC power distribution board (DCPDB) must be provided as needed			
	Supply, install, and commission Two (2) units of brand new air-conditioning system at DICT Roces equipment room			
	Ensure the compatibility of all components of the system, such as compatibility of the interface between the paralleling switchgear and the generator, including but not limited to engine components, governor equipment, and automatic voltage regulation components			
	Permitting requirements (building permit, mechanical permit, electrical permit, sanitary permit, etc.), installation, and maintenance support of Genset to be handled by the Contractor, in coordination with the DICT			
Network Management System (NMS):				
1	**Minimum Technical Requirements:**			

	Supply and installation of server and client software/hardware for provisioning, monitoring, fault detection, and management of the network			
	Equipped with rich Graphical User Interface (GUI). Capable to perform any Network Management operation via GUI without the need for the user to perform Command Line Interface (CLI) commands			
	Architecture is based on client-server relationships using standard technologies			
	System is able to display an optical logical layer showing Logical Elements (Optical cards/ports) and logical optical topology			
	System is able to display a graphical lambda availability chart for Optical Multiplex Section (OMS)			
	System is able to allow the user to see a list of all current alarms for a specific network element (NE) or trail or tunnel or service			
	Alarm severity ranking of at least four categories: warning, minor, major, critical			
	Highest severity alarm state in a network element is displayed utilizing different icon colors on the topological map			
	Topological links that are affected by an alarm is displayed utilizing different link colors on the topological map according to the highest severity alarm affecting the link			
	Systems is able to provide a backup, backup schedule, and restore functionality for all collected and generated data, configurations, alarms, and log history			
	Provision of a backup NMS server			
	System is equipped with NMS/Controller, with an open interface to allow integration to DICT's existing Management Network			
	System provides a fully resilient DCN using either in-band or out-of-band communications that will support network management even in the event of a fiber break			
	Provision of Network Management System (NMS) server and client software/hardware for provisioning, monitoring, fault detection, and management of the network			
2	**Scope of Work:**			
	Conduct site survey, site validation at DICT Roces where the NMS will be installed			
	Contractor to provide detailed NMS design, technical specifications, technical documents, and other pre-requisite documents design (signed by Professional Electronics Engineer (PECE) and duly approved by DICT.			
	Contractor to complete the site validation and detailed network design and other necessary tasks within forty-five (45) calendar days upon receipt of Notice to Proceed (NTP)			
	Supply, deliver, install, configure, test, and commission the Network Management System (NMS), including but not limited to the server, workstation, equipment racks, cabling, electrical wiring, software, and its ancillaries, and power and backup systems			
Spare Deliverables:				
1	**Minimum Technical Requirements:**			

	At least 10% of the total hardware for service/traffic carrying modules shall be provisioned as spares. Such is applicable for each module type			
	Provide at least three (3) units per module type for those non-service/non-traffic carrying modules			
2	**Scope of Work:**			
	To provide sufficient in-country pool of spares for Spare Parts exchange within two (24) hours in times of non-availability of Spare Parts at DICT side due to non-repair or non-arrival of repaired equipment at DICT's premises			
	Spares to be transported by the Contractor to DICT designated sites or warehouses after delivery acceptance			

SUMMARY OF TECHNICAL SPECIFICATIONS COMPONENT 4: 100Gbps IP TRANSIT				
ITEM	**COMPLIANCE REQUIREMENTS**	**COMPLIANCE**		**REFERENCE POINT**
		YES	**NO**	
1	**Minimum Technical Requirements:**			
	Transit provider/s is recognized and proven global top Tier-1 optical IP networks			
	Internet Transit points in the United States (Equinix LA4) is connected to a Global "Tier-1" ISP Provider's Backbone Network and inclusion of cross-connection cable to DICT Equipment			
	Contractor to ensure that the DICT Equipment to Tier-1 equipment handover interface in LA4 is only 1x100GE			
	Equipped with Secure Blackhole for DDOS mitigation			
	Provide Online bandwidth utilization monitoring access to DICT			
	Transit Provider to allow traffic from DICT Network to cross a service provider network to the rest of the internet			
	Equipped with Static routing or BGP peering options made available			
	Provider(s) should fulfill and provide all corresponding connectivity, security services, and Service Level Agreement through the provider's wholly-owned network(s) in North America			
	Tier-1 IP transit provider warrants the Master Service Agreements (MSA), Service Level, and Service Credit to be approved by DICT			
	Must guarantee and not exceed Network Service Level Agreement defined in MSA with Packet success rate of > 99.9%			
	Latency adheres to the Service Level Agreement reflected in MSA: -North America to Asia < 140 ms -North America to Europe < 85 ms -Intra-North America < 45 ms -Intra-Europe < 35 ms			
2	**Scope of Work:**			
	Contractor to cover the maintenance and support of 100 Gbps IP transit, acquiring IPv4/IPv6 Addresses, Autonomous System Number (ASN) to APNIC, and cross-cable connection to DICT Equipment for 12 months in Equinix LA4, Los Angeles, California, USA			
	Contractor to handle the APNIC application, processing, securing, and sourcing out IP Address Version 4 & 6 (IPv4 & IPv6) for IPv4 Addresses /22 (or equivalent) one thousand twenty-four (1024) Public IP addresses and IPv6 Addresses /32 sixteen million seven hundred seventy-seven thousand two hundred sixteen (16,777,216) of /56 subnets Public IP addresses and an Autonomous System Number (ASN)			
	Contractor to shoulder any incurred APNIC transfer, taxes, and other charges in completing and acquiring IPv4/IPv6			

	Contractor to cover and ensure DICT APNIC's annual membership fee for five-years. Membership fee shall be inclusive on the proposal and subject to the provided DICT payment schedule. Contractor to determine how APNIC's subscription will be paid, whether annual or one-time payment for 5 years			
	Provide hard and soft copies of the technical documents, detailed network design, method of procedure, technical specifications, and other related documentation. The detailed design must be approved and signed by a Subject Matter Expert or Equivalent.			
	Prepare the Installation drawings in advance for the installation references and give complete information necessary for the installation of the structure			
	Conduct system reliability testing, commissioning, and acceptance			
	Completion of the DWDM/Transponder link test from DICT in Quezon City to Equinix LA4, Los Angeles California, USA before IP Transit End-to-End testing			
	Performance and acceptance test to commence after the Contractor has confirmed in writing that all works conform with the terms of the contract and or purchase order and submission of pre-test results			
	Compliance with the approved test plan for all hardware and software to be delivered and installed			
	Provide test equipment and conduct a link test following the approved test procedures			
	Contractor (or IP Transit provider) to submit a Master Service Agreement between them and the provider for review by DICT			
	Performance and acceptance test to commence after the Contractor has confirmed in writing that all works conform with the terms of the contract and or purchase order and submission of pre-test results			
	Provision of necessary label, documentation, and as-built drawing			
	Contractor to submit and comply with the approved testing plan. Revisions/modifications if necessary to reviewed and approved by the DICT without any additional cost			
	Provide other additional materials and peripherals needed to establish a working system for this project. Cost of additional materials and peripherals must be under the expense of the Contractor			

Standards Compliance - National Structural Code of the Philippines 2015 (NSCP 2015) - Philippine Electrical Code 2017 - American Institute of Steel Construction latest edition (AISC) - American Society of Testing and Materials latest edition (ASTM) - American Concrete Institute (ACI318-11M) - American Society of Civil Engineer (ASCE) - American Welding Society latest edition (AWS) - British, European and International Standards (BS EN ISO)			
Materials Specifications			
The materials and installation requirements shall conform to the specifications of standards and reference			
Concrete shall have a minimum compressive strength of not less than 35MPa at 28 days. All grout shall be non-ferrous and non-shrink. The concrete cover shall have a minimum thickness of 50mm			
Reinforcing steel bars shall have a minimum yielding strength of 415MPa			
Welding shall meet the minimum requirement of AWS			
Structural materials steel shall meet the minimum requirement of ASTM and AISC			
Hot-dip galvanized coating on fabricated iron and steel materials, with a minimum thickness of 86 microns for all members shall be following BS EN ISO 1461			
Earthworks Includes soil investigation, soil test if any, pilot holes, excavation of the design grade line, width, length, and depth of concrete works in reinforcing bars as per approved plan and specifications			
Concrete Works Installation of reinforced concrete manholes, handholes, telecommunication poles, Genset concrete pads, cable entrance facilities, etc., with a minimum mix of 1:2:3 mixing of concrete as per the approved plan and specifications			
Reinforced Steel Bar (RSB) Works Setting/installation of standard reinforcing steel bars for solid concrete construction as per the approved plan and specifications			
Form Works Setting/formation of good quality of form for the required concrete foundation design and as per the approved plan and specifications			
Fabrication part of cable ladders, cable trays, riser poles, bridge attachments, pole hardware, and other accessories, pre-assembling/installation of the structure to be done by the contractorr in the fabrication yard/site, before hauling at the actual site for final installation as per approved plan and specifications.			

Galvanization/ Painting Works Application of primer paint, paint, and adequate micron of hot-dip coated galvanized steel parts, such as for steel racks and ladders, pipes, including nuts and bolts as per approved plan and specifications. After fabrication, application of adequate micron of hot-dip galvanized, a metal primer paint should be applied before the delivery at the site and the final installation and a final coating of the paint should be applied and completed			
Security and Fencing Works Installation of a perimeter fence along with the temporary shelters and site warehouse/s with 2x2 cyclone wires, security cameras, and other accepted industry standard methodologies to protect construction materials, equipment, machinery, gadgets & devices at the project sites/locations from theft, vandals, deterioration			
Shelter Works Ensure all temporary/off-site shelters to protect and provide safety to personnel, materials, equipment, machinery, gadgets, and devices are built based on applicable industry standards and practices. All expenses incurred shall be borne by the Contractor			
Supply and install a soundproof container-type steel shelter for two (2) 80kVA Gensets at Roces equipment node, resting on a concrete pad or slab. The concrete pad shall be a minimum of 1.5 times the length and breadth of the adequately spaced generator sets and fuel supply. The Gensets and fuel supply must be attached on heavy-duty concrete anchors and shall be installed before the concrete is poured. Measurement and placement must be exact. The shelter shall safely accommodate a fuel supply system according to plan and specifications			
The Genset shelter is equipped with removable wall sections or with swing-up hydraulic type doors to allow service access, maintenance and repairs. The shelter must be lockable, tamper and vandal resistant, including the ability to lift the shelter off the installation			
The Genset shelter shall have an adequate incoming air supply to support the generator in full operation and a suitable exhaust system shall be installed to keep the equipment room and personnel away from smoke, pollutants, and noise			
The Genset shelter shall be provided with a grounding busbar and must be bonded to the premise properly			
Design, supply, deliver, and install insulated, waterproof, secure, vandal-resistant, steel racks for the Battery Banks per approved plan and specifications to include: - Supply and install anchor bolts, steel angle supports, grounding busbar, and other accessories necessary for providing a stable battery bank rack - Supply and install racks for the rectifier system			
Construct all Genset shelter/s 1 meter above the historical flood line that can withstand wind load as specified at the National Structural Code of the Philippines, NSCP			

Backfilling and Compaction Works Backfill shall be placed in thin lifts (maximum 200mm) and compacted to a minimum of 95% of standard proctor maximum dry density. If excavated materials are not suitable for backfill, it shall be the responsibility of the contractor to supply and compact suitable clean materials to meet the requirement			
Any organic or deleterious material shall be removed and will not be permitted in fills, except as permitted by the geotechnical engineer, no rock or similar irreducible material with a maximum dimension greater than 100 mm shall be buried or placed infills. Gravel bedding shall have a minimum thickness of 200mm and ¾" coarse aggregates shall be used			
Earthing System Design, supply, install, test the earthing system at project sites following the grounding recommendations of the Philippine Electrical Code			
All steel shelters, structures, equipment rack, cable trays, and cable ladders, GI pipes, and other steel assemblies to secure and protect the DWDM/ROADM equipment, Gensets, rectifier and battery banks, fiber optic cables, 7-Way Micro ducts, etc. shall be earthed and bonded with the station's grounding system			
All grounding mediums shall be bonded together to include Gensets, battery banks and rectifiers, telecommunications equipment, and metallic piping system within the premise of the stations/project sites			
Access Road Installation of a route between the main roads to the staging site. The access road shall accommodate vehicles that deliver materials to the site area. The road surface and base course are made of compacted aggregates. The total width of the road is 3.2m with a slope grade of 2-3% at each end. The canal has an inclined slope of 5%			
Hauling Works Undertake hauling activities of equipment and power shelters, perimeter fence parts, and other support materials, in any manner as deemed appropriate to the location of the project sites			
DWDM/ROADM Equipment Installations Responsible for the supply and delivery of all materials, hardware, cables, electrical wires, installation kits, and accessories, tools, and equipment, measuring devices and gadgets, communication expenses, and other items such as sealants, cable ties, ropes, crowbars, slings, hacksaw, power tools, dustbins, etc. for the proper installation of the ICT equipment at all project sites and shall coordinate with the DICT Project Team for schedule, locations, security, access pass, permits, temporary facilities, etc			

Ensure the availability of technical documentation, technical specifications, technical plans, equipment layout, cable layout, wiring layout, shelf layout, installation parameters, installation guides, system hardware internal connections, system configuration, fiber lists and assignment, cable lists, equipment rack installation guide, etc. at all project sites			
Restoration Works, Damages, and Liabilities Contractor shall be responsible for the restoration of all project sites after the completion of the project. The contractor shall be answerable to all expenses, damages, and liabilities that will occur during hauling works, earthworks, equipment installation works, fiber optic cable and 7-Way Microduct installation work, shelter construction works, perimeter fencing works, and other associated works of the project			
Occupational, Safety, and Health Comply with the DOLE's Occupational Safety and Health standards and shall pursue, author, keep and maintain safety manuals of the stated programs to eliminate hazards and reduce risks which may result in personal injury, property damage, fire, security losses, and even loss of life. The contractor shall pursue a "ZERO ACCIDENT PROGRAM" as a key to a safe, healthy, and productive workplace and project sites			
Shall have a Construction Safety and Health Program, duly signed by the owner of the company, to accomplish work safely, efficiently, and with regard for the environment			
Must show proof of OSH training of his field team			

SUMMARY OF TECHNICAL SPECIFICATIONS
TESTING, COMMISSIONING AND ACCEPTANCE

ITEM	COMPLIANCE REQUIREMENTS	COMPLIANCE		REFERENCE POINT
		YES	NO	
1	**General Requirements:**			
	Conduct system reliability testing, commissioning, and acceptance within thirty (30) calendar days upon completion of installation works			
	Compliance with the approved test plan for all hardware and software to be delivered and installed			
	Provide test equipment and conduct a link test following the approved test procedures			
	Coordinate and submit information on locations and schedule for testing and acceptance within the prescribed period			
	Submit and comply with the approved testing plan. Revisions/modifications if necessary must be approved by the DICT without any additional cost			
2	**Transponder Component:**			
	Provide a test plan and method of procedures for approval of DICT including but not limited to the following: - NE and NMS performance - Optical power measurements - Data/Throughput testing in accordance to RFC2544 test - Power supply test (Voltage test, power redundancy test) - Knock test of rack/cabinet - Loopback tests - DCN parameter checking - One (1) week Link Stability/Confidence test - DCN functionality test together with the Network Management System visibility test - DCN testing demonstrating transponder network system visibility on the Network Management System - Rectifier Main and Redundant Switchover and other testing protocols - Transponder client interfaces launch power output measurement - Transponder/Muxponder, NMS HW, and SW inventories			
3	**Optical Transport Network Component:**			

	Provide the test plan and method of procedures for approval of DICT, including but not limited to the following: - Power Redundancy Test - Point to Point Encryption Test - DCN Management Test - Ethernet Circuit Throughput - RFC2544 Test - Ethernet Latency - RFC 2544 Test - Long Time Bit Error Rate Test - Forward Error Correction Test - NMS Performance - Power Supply Level Reliability Test - Wavelength Switching Functions - Manual and Automatic Protection Switching Functions - Protection Switching Priorities - Wavelength Power Test			
4	**100 Gbps Tier 1 IP Transit Component:**			
	Acceptance and Testing to be done after the completion of the Transponder/ DWDM link from Equinix LA4 Data Center, Los Angeles California, USA to DICT NGDC1 Diliman Quezon City			
	Provide a test plan and method of procedures for approval of DICT, including but not limited to the following: - 100 Gbps Tier-1 IP Transit Connectivity and Speed Test - Integration and Peering with DICT IP Network - Perform network performance in compliance with ITU-T Y.1564 - 24 hours Link Stability/Confidence test			
5	**Fiber Optic Cable and 7-Way HDPE Micro ducts:**			
	Comply with the approved test plan for all installation materials to be delivered and installed, including but not limited to the following: 7-Way HDPE Micro ducts: - Pressure / Leak Test - Ball Bearing Test Fiber Characterization Test: - Connector Inspection - Insertion Loss - Reflectance - Optical Attenuation Loss - Spectral Attenuation - Chromatic Dispersion - Polarization Mode Dispersion			

6	**End-to-End Testing:**			
	Provide a test plan and method of procedures for approval of the DICT NBP Project Management Office. End-to-End testing to include but not limited to the Link Test and Restoration Test of the following: - All ROADM Node Segments - All BCDA Circuit - 1x100 Gbps LA - NGDC1 Diliman IP Transit Circuit - All Client Circuits as defined on the Traffic Matrix. Refer to Annex B5 for details. - All FOC segments (ODF-ODF) and Micro ducts/Telecom Conduit/Pipes			
7	**Integration and Cross-Connect:**			
	Provide the test plan and method of procedures for approval of the DICT NBP Project Management Office: - NGDC1 Diliman Free Wi-Fi Core Router and Optical Transport Network Ph1 link and restoration test - NLTE SFLU and Optical Transport Network Ph1 - NLTE Los Angeles and Tier1 IP Transit Provider equipment			
8	**Network Management System (NMS):**			
	Provide a test plan and method of procedures for approval of DICT NBP Project Management Office, including but not limited to the following: - Capacity Management Test - Change Management Test - Configuration Management Test - Fault Management Test - Incident Management Test - Inventory Management Test - Order Management Test - Performance Management Test - Problem Management Test - Provisioning Test - Resource and Service Management Test - System Log Server Test - Ticketing Test - Traffic Engineering Test			
9	**Knowledge Transfer and Submission of the Final Project Documents:**			
	Conduct comprehensive local training and knowledge transfer for DICT nominated personnel before the date of acceptance			
	Provide a training plan/syllabus within the prescribed period for approval by DICT, within thirty (30) calendar days upon receipt of the notice to proceed (NTP)			

	Provide a training plan/program which must include the schedule (date and time), duration of the training, training activities, venue (vicinity and location), method of delivery, course outline, required participants, for approval of DICT			
	Provide the necessary training documents in hard and soft copies for all participants			
	Course Design and Method of Delivery:			
	The training methodology should be able to demonstrate or at least simulate actual equipment procured by the End-User during the training course. This will enable the END USER to simulate faults that may occur on the equipment during the operation and maintenance phase			
	Shall cover both theoretical and practical application and hands-on training			
	Theoretical, practical application and hands on training for DWDM/ROADM/CDC-F, Transponder/Muxponder, SLTE Basic Technology, OTN Basic Technology, Fiber Optic Cable, OSI Model, IP Transit			
	Theoretical, practical application and hands on training for Hardware Functionalities			
	Theoretical, practical application and hands on training for Commissioning, Provisioning, Configuration, Operation, and Supervision of the training, including the venue, meals, and accommodation of trainers and passion			
	Theoretical, practical application and hands on training for Administration and Maintenance/Troubleshooting			
	Theoretical, practical application and hands on training for Network Management System (NMS) Operation, Administration and Maintenance			
	Theoretical, practical application and hands on training for Advance IP Routing, including but not limited to: - BGP Basics - Scaling BGP - Using Communities - Deploying BGP in an ISP network - Practical application and hands-on			
	Contractor to cover all expenses related to the participants, transportation, travel expenses, printed materials, supplies, tools, equipment and other requirements to conduct the training			
	Accommodate at least thirty (30) personnel per session as designated by DICT and/or BCDA and evidenced by the issuance of Training Certificates to the participants. Airfare of participants from Visayas and Mindanao to be covered by the Contractor			
	Ssubmit a digitized and bounded copy of the Training Plan and materials, thirty (30) days before the conduct of training. Training Plan must include methodologies and a detailed schedule. Materials will be owned by DICT			
	Submit and comply with the training plan as specified in the “Deliverables”. Revisions/modifications if necessary must be approved by DICT and without any additional cost			
	Provide training certificates to training participants upon completion of the training courses through DICT’s Training Division			

10	**Project Completion:**			
	Project Implemenation to be completed in no longer than two hundred (200) calendar days, including all activities of the Project such as the delivery of the hardware and equipment, installation and proof of airtime service subscription at the address/es specified by the Procuring Entity			
11	**Warranty and Support:**			
	Transponder Component:			
	During the project deployment and the first five (5) years of the warranty and support, the contractor to provide at no cost to DICT, four (4) service vehicles preferably 4x4 pickup trucks including but not limited to fuel, insurance, maintenance			
	Contractor to ensure an efficient project monitoring and the entire duration of the maintenance and warranty support on HW and SW of the procured ICT equipment			
	Contractor to maximize the mobility during the crucial deployment of the procured ICT equipment during the installation supervision, acceptance, testing, system integration, and final acceptance of the ICT equipment			
	Declaration that Goods supplied are new, unused, of the most recent or current models, and that it incorporates all recent improvements in design materials, except when the technical specifications required by DICT provide otherwise			
	Shall be responsible for the hardware replacement and return within sixty (60) days upon shipment of defective item/ component, otherwise, an advanced hardware replacement will be provided. The contractor should have an advanced hardware replacement available on hand to replace the faulty hardware under warranty within 24-hours			
	Provide the End User access to online documents, manuals, and datasheets			
	Provide the End User access to an online fault ticketing system			
	Provide support to DICT's system upgrades but not limited to hardware, software, additional lambda channel expansion, integration, optimization, and testing			
	The Contractor must consider all interruptions in service as an urgent priority. Must assign competent technical staff to provide technical support upon receipt of call or email and must be available twenty-four (24) hours a day, seven (7) days a week			
	Provide technical support for all hardware and software system components			
	Declaration that all goods supplied under the contract have no defect arising from design, materials, or workmanship			
	Declaration to make good, free of charge, fixing of defects which may develop on the equipment due to faulty or improper design, materials, or workmanship			
	Shall be responsible for the replacement of defective parts of the Transponder/Muxponder system. The warranty must cover full replacement of defective items, free of charge, including labor, spare parts, materials, shipping, and transport			
	Provide availability of local and overseas technical support for all delivered hardware and software upon receipt of call on a 24/7 basis			

	Contractor to take the lead on the generation of trouble tickets to ensure prompt action based on the severity of the tickets raised			
	Provide immediate on-site body support aside from the remote support for Emergency and Critical trouble tickets upon recommendation and assessment of Technical Support at no cost from DICT			
	Declaration of the availability of service units for all equipment for free use until the repair is completed or a new supply is ready			
	Declaration on the availability of spare parts for at least ten (10) years			
	Contractor to assign a single point of contact for technical and non-technical queries, methods of procedures, and troubleshooting			
	Optical Transport Network Component:			
	Provide five (5) years warranty and support for DWDM/ROADM, amplifier, and its components			
	Must have an existing outside plant (OSP) field support services within the identified nodes as defined in the Terms of Reference. The Contractor or through a third-party contractor must show proof of existence by providing locations and addresses of each field support service and a list of personnel with qualifications			
	Hardware replacement and return within sixty (60) days upon shipment of defective item/component otherwise an advanced hardware replacement will be required. The contractor should have an advanced hardware replacement available on hand to replace the faulty hardware under warranty within twenty-four (24) hours			
	During the project deployment and the first two (2) years of the warranty and support, the contractor to provide at no cost to DICT, the three (3) service vehicles preferably 4x4 pickup trucks including but not limited to fuel, insurance and maintenance			
	Contractor to ensure an efficient project monitoring and the entire duration of the maintenance and warranty support on HW and SW of the procured ICT equipment			
	Contractor to maximize the mobility during the crucial deployment of the procured ICT equipment during the installation supervision, acceptance, testing, commissioning, system integration, and final acceptance of the ICT equipment			
	Provide access to the Contractor's online documents, manuals, and datasheets			
	Provide access to an online fault ticketing system			
	Provide Twenty-four hours a day, seven days a week (24/7) Technical Support			
	Replacement of damaged equipment (DWDM/ROADM, Optical amplifier, rectifier, and other parts of the system)			
	Contractor to perform Equipment software upgrade and updates			
	Contractor to conduct monthly physical inspections for the coverage area			
	Perform maintenance of materials and equipment			

	Secure 24/7 on-call standby maintenance team for immediate response in case of system failure/trouble			
	Fiber Optic Cable Build Component:			
	Upon completion and acceptance of the FOC segments, the two (2) years warranty and maintenance support will commence			
	During the project deployment and the first two (2) years of the warranty and support, the contractor to provide at no cost to DICT, the four (4) service vehicles preferably 4x4 pickup trucks including but not limited to fuel, insurance and maintenance			
	Contractor to ensure an efficient project monitoring and the entire duration of the maintenance and warranty support of the procured FOC			
	Contractor to maximize the mobility during the crucial deployment of the procured FOC during the installation supervision, acceptance, testing, and final acceptance of the FOC			
	Maintenance work includes the following services to be rendered only to the eight (8) FOC route segments. The maintenance works for the 250 km air-blown 144-core miniFOC shall not be part of the project			
	Conduct physical inspections and corrections of the network for the coverage area if necessary			
	All routes covering all active agencies connected must be inspected at least every quarter per year			
	Restoration and replacements of damaged and/or stolen fiber optic cable			
	Pole replacement/relocation/straightening/ erection			
	Re-tensioning and maintaining separation of fiber optic cable to other facilities			
	Repair/restoration of ODF/patch panel including the splicing closure			
	Repair of broken duct/conduit system and other underground facilities			
	Cleaning, dewatering, and leak repair of manholes and hand holes			
	Replacement of FOC pigtail and/or patch cord at the ODF			
	Report of damaged Equipment (Media Converter, Switch, router, and other active devices) part of the project			
	Regular update of fiber core assignment record			
	For new installation, repair, and restoration of telecommunication conduits/pipes/micro ducts and fiber optic cable, the Contractor will submit a revised as-built plan, test results, material consumption, and other necessary documents			
	Contractor to maintain its own strategic warehouses capable to store, deploy its materials and machineries during preventive and corrective maintenance to be inspected and approved by the End user			
	Secure 24/7 on-call/standby maintenance team for immediate response in case of network failure			
	Declaration that all necessary tools, equipment, vehicles, facilities, and materials must be available at all times			

	Declaration that Goods supplied are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design, materials, except when the technical specifications required by DICT provide otherwise			
	Declaration that all Goods supplied have no defect, arising from design, materials, or workmanship, from any act or omission of the contractor that may develop under the normal use of the Supplied Goods in the conditions prevailing in the country of the final destination			
	Warranty to cover full replacement of defective items, free of charge, including labor, spares, and materials within the warranty period			
12	**Service Level Agreement (SLA):**			
	Declaration that the contractor considers all interruptions in service as an urgent priority. The contractor will assign competent technical staff to provide online technical support during network outages, technical issues, technical advice, etc. upon receipt of call or email and must be available twenty-four (24) hours a day, seven (7) days a week			
	Contractor must maintain hardware spare service which enables the DICT to receive a service unit for defective hardware for an agreed period			

Strictly implement the response time target on the below table to ensure high network reliability and availability for transponder / muxponder system and optical transport network system:

SERVICE ITEM		BASIC SUPPORT	
Helpdesk		24 hours x 7 days a week	
Emergency Service		24 hours x 7 days a week	
ALARM SEVERITY LEVEL	**CRITICAL**	**MAJOR**	**MINOR**
Response Time (After receipt of advice)	Within 1 hour	Within 8 Business hours	Within 24 Business hours
Restoration Time (Exclude travel time)	Within 6 hours	Not Applicable (non-traffic affecting)	Not Applicable (non-traffic affecting)
Progress Update Time (Escalation)	Update every 1 hour	1 update every day	1 update every week
Resolution Time	15 Business Days	45 Business Days	90 Business Days
Root Cause Analysis (RCA Report)	Within 1 calendar day after final resolution time		

	Compliance with SLA template per attached Annex D. The content and format can be revised as needed by the End User or as required to optimize the SLA			
	For the SLA agreement from the Data Center Facility Provider (Equinix), the SLA Agreement must be submitted by the contractor to the End User for review and approval			
	For the Remote Hand Support services at Equinix LA4 Data Center inline with the standard SLA to all co-locators subscriptions, the contractor shall provide the response time target			
	The Contractor to provide an escalation process matrix			

Bid Form

[Insert date]

To: *[Name of PROCURING ENTITY]*
[Insert address]

We, the undersigned, declare that:

(a) We have examined and have no reservation to the Bidding Documents, including Addenda, for the Contract *[insert name of contract]*;

(b) We offer to execute the Works for this Contract in accordance with the Bid and Bid Data Sheet, General and Special Conditions of Contract accompanying this Bid;

The total price of our Bid, excluding any discounts offered below is: *[insert information]*;

The discounts offered and the methodology for their application are: *[insert information];*

(c) Our Bid shall be valid for a period of 120 days from the date fixed for the Bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(d) If our Bid is accepted, we commit to obtain a Performance Security in the amount of *[insert percentage amount]* percent of the Contract Price for the due performance of the Contract;

(e) Our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from the following eligible countries: *[insert information]*;

(f) We are not participating, as Bidders, in more than one Bid in this bidding process, other than alternative offers in accordance with the Bidding Documents;

(g) Our firm, its affiliates or subsidiaries, including any subcontractors or suppliers for any part of the Contract, has not been declared ineligible by the Funding Source;

(h) We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed; and

(i) We understand that you are not bound to accept the Lowest Calculated Bid or any other Bid that you may receive.

(j) We likewise certify/confirm that the undersigned, is the duly authorized representative of the bidder, and granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for the *[Name of Project]* of the *[Name of the Procuring Entity]*.

(k) We acknowledge that failure to sign each and every page of this Bid Form, including the Bill of Quantities, shall be a ground for the rejection of our bid.

Name: _____

In the capacity of: _____

Signed: _____

Duly authorized to sign the Bid for and on behalf of: _____

Date: _____

DAYWORKS SCHEDULE

LABOR

DESIGN, BUILD, AND ESTABLISHMENT OF THE NATIONAL FIBER BACKBONE – PHASE 1

NO.	TYPE OF LABOR	UNIT	RATE
1	Project Manager	Hour	
2	Senior Telecoms Engineer	Hour	
3	Safety Officers	Hour	

DAYWORKS SCHEDULE

MATERIALS

DESIGN, BUILD, AND ESTABLISHMENT OF THE NATIONAL FIBER BACKBONE – PHASE 1

NO.	TYPE OF MATERIALS	UNIT	RATE
1			
2			
3			
4			
5			
6			
7			
8			

DAYWORKS SCHEDULE

EQUIPMENT

DESIGN, BUILD, AND ESTABLISHMENT OF THE NATIONAL FIBER BACKBONE – PHASE 1

NO.	TYPE OF EQUIPMENT	UNIT	RATE
1			
2			
3			
4			
5			
6			
7			

CONTRACT FOR THE DESIGN AND BUILD OF THE NATIONAL FIBER BACKBONE PHASE I

THIS AGREEMENT, made this [insert date] day of [insert month], [insert year] by and between:

The **BASES CONVERSION AND DEVELOPMENT AUTHORITY**, a government instrumentality vested with corporate powers, duly organized and existing pursuant to Republic Act No. 7227, as amended, with principal office at BCDA Corporate Center, 2nd Floor Bonifacio Technology Center, 31st Street Crescent Park West, Bonifacio Global City, Taguig, Metro Manila, Philippines, represented herein by its President and Chief Executive Officer, **VIVENCIO B. DIZON**, duly authorized for this purpose under BCDA Board Resolution No. _____, as evidenced by Secretary's Certificate dated _____ hereto attached as Annex "**A**" and made an integral part hereof, and hereinafter referred to as "**BCDA**";

and

The **[Name of the Contractor]**, a company with principal office at _____, represented herein by its _____, _____, duly authorized for this purpose under _____ No. _____, as evidenced by Secretary's Certificate dated _____ hereto attached as Annex "**B**" and made an integral part hereof, and hereinafter referred to as "**CONTRACTOR**";

The **BCDA** and **CONTRACTOR** shall be collectively referred to as "**Parties**", and each a "**Party**".

WHEREAS, the Entity is desirous that the Contractor execute the Design and Build of the National Fiber Backbone Project Phase I (hereinafter called "the Works") and the Entity has accepted the Bid for [insert the amount in specified currency in numbers and words] by the Contractor for the execution and completion of such Works and the remedying of any defects therein.

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.

2. The following documents shall be attached, deemed to form, and be read and construed as integral part of this Agreement, to wit:

   (a) General and Special Conditions of Contract;

   (b) Drawings/Plans;

   (c) Specifications;

   (d) Invitation to Bid;

   (e) Instructions to Bidders;

   (f) Bid Data Sheet;

   (g) Addenda and/or Supplemental/Bid Bulletins, if any;

   (h) Bid form, including all the documents/statements contained in the Bidder's bidding envelopes, as annexes, and all other documents submitted (e.g., Bidder's response to request for clarifications on the bid), including corrections to the bid, if any, resulting from the Procuring Entity's bid evaluation;

   (i) Eligibility requirements, documents and/or statements;

   (j) Performance Security;

   (k) Notice of Award of Contract and the Bidder's conforme thereto;

   (l) Other contract documents that may be required by existing laws and/or the Entity.

3. In consideration of the payments to be made by the Entity to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Entity to execute and complete the Works and remedy any defects therein in conformity with the provisions of this Contract in all respects.

4. The Entity hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects wherein, the Contract Price or such other sum may become payable under the provisions of this Contract at the times and in the manner prescribed by this Contract.

IN WITNESS whereof the parties thereto have caused this Agreement to be executed the day and year first before written.

Signed, sealed, delivered by the (for the Entity)

Signed, sealed, delivered by the (for the Contractor).

Binding Signature of Procuring Entity

_____

Binding Signature of Contractor _____

[Addendum showing the corrections, if any, made during the Bid evaluation should be attached with this agreement]

BASES CONVERSION AND DEVELOPMENT AUTHORITY

Design and Build of the National Fiber Backbone Project Phase I

CHECKLIST AND TABBING REQUIREMENTS OF BIDDING DOCUMENTS

> **ORIGINAL ENVELOPE**	
Eligibility and Technical Component (Original)	
Financial Component (Original)	
> **COPY NO.1 ENVELOPE**	
Eligibility and Technical Component (Copy No. 1)	
Financial Component (Copy No. 1)	

FIRST ENVELOPE - ELIGIBILITY & TECHNICAL COMPONENT		
NO.	**DESCRIPTION**	**TAB**
1	Authority of Signatory (with Secretary's Certificate if Corporation)	**"A"**
2	Authority of Signatory for JV/Consortium, if applicable	**"B"**
3	PhilGEPS Platinum Certificate of Registration (3 Pages)	**"C"**
4	Statement of all ongoing government & private contracts (Non-Disclosure may be grounds for disqualification)	**"D"**
	a) Notice of Award / Notice to Proceed	
	b) Contract	
5	Statement of Single Largest Completed Contract (SLCC)	**"E"**
	a) Certificate of Acceptance or Completion	
	b) Contract	
	c) OPTIONAL: Contract Value Adjusted to Current Prices issued by the PSA	
6	Special PCAB License in case of JV / Consortium (PCAB license of AAA Large B, PCAB License must be in General Engineering, General Building, Electrical Works, or Communication Facilities)	**"F"**
7	Valid JV/Consortium Agreement	**"G"**
8	NFCC computations	**"H"**
9	Valid Bid Security (any of the following)	**"I"**
	Bid Securing Declaration	
	Cash/ cashier's/ manager's check issued by universal or commercial bank	
	Surety bond	
10	Organizational Chart for the contract to be bid	**"J"**
11	List of key personnel (List of contractor's personnel nominated/to be assigned to the project with their complete qualification and experience data. Personnel must meet the required minimum qualifications and years of experience set in the BDS) (CV and Lic for PM, STE) plus BOSH/COSH for Safety Officer The licenses and certifications/accreditations of the nominated personnel must be valid during the submission of bids. If expired, the bidder must submit proof of renewal.	**"K"**
	a) Project Manager - 1	
	b) Senior Telecommunications Engineers - 5	
	c) Safety Officer/s - 1	
	d) OPTIONAL: List of Additional Personnel proposed by the Bidder	
12	Certificate of Availability of Personnel	**"L"**
13	List of required equipment (Owned, Under Purchase Agreement and/or Under Lease Agreement)	**"M"**
	a) Cable Plough / Trenching Machine - minimum of 4 units	
	b) Horizontal Directional Drill (HD) Machine - minimum of 4 units	
	c) Crane/Boom Truck - minimum of 5 units	
	d) Fiber Blowing Machine and Air Compressor - minimum of 4 units	
	e) Arc Fusion Machine - minimum of 4 units	
	f) Optical Spectrum Analyzer - minimum of 2 units	
	g) Bit Error Rate Test Analyzer - minimum of 4 units	
	h) Optical Time-Domain Reflectometer - minimum of 2 units	
	i) Optical Power Meter / Optical Light Source - minimum of 4 units	
	j) Service Vehicles (FOC Build Component) - minimum of 4 units	
	k) Service Vehicles (Transponder) - minimum of 4 units	
	l) Service Vehicles (Optical Transport Component) - minimum of 3 units	
	m) OPTIONAL: List Additional Equipment proposed by the Bidder	
14	For Equipment Owned	**"N"**
	a) Certificate of Availability of Equipment	
	b) Proof of Ownership (Deed of Sale, ORCR, etc. must indicate the Equipment's Capacity and Description)	

15	For Equipment under Purchase Agreement	**"O"**
	a) Certificate of Availability of Equipment signed by Equipment Vendor	
	b) Purchase Agreement	
16	For Equipment under Lease Agreement	**"P"**
	a) Certificate of Availability of Equipment signed by Lessor	
	b) Lease Agreement	
	c) Proof of Ownership to the Lessor (Deed of Sale, ORCR, etc.)	
17	Omnibus Sworn Statement	**"Q"**
18	Summary of Technical Specifications	**"R"**
	Document Submission for the Components of the NFBP1:	
19	**Fiber Optic Cable Build (Component 1)** Design, Supply, Build, Delivery, Installation, Testing, Commissioning, Acceptance of 7-way HDPE micro ducts, manholes, handholes, telecommunication poles, air-blown mini fiber optic cable, optical joint enclosures, optical distribution frames, and their corresponding accessories.	**"S"**
	a) Preliminary Conceptual Design Plans in accordance with the degree of details specified by the Procuring Entity;	
	b) Design and construction methods;	
	c) Value engineering analysis of design and construction method	
	d) Manufacturer's Authorization that the Bidder is an accredited reseller of the proposed FOC to be supplied	
	e) Manufacturer's Authorization that the Bidder is an accredited reseller of the proposed HDPE Ducts to be supplied	
20	**Transponder Component (Component 2)** Design, Supply, Build, Delivery, Installation, Commissioning, Integration, Testing, Acceptance of Transponder/Muxponder Equipment System, Power System, Network Management System (NMS), and Data Communications Network (DCN) (herein referred to as "Transponder")	**"T"**
	a) Preliminary Conceptual Design Plans in accordance with the degree of details specified by the Procuring Entity;	
	b) Design and construction methods;	
	c) Value engineering analysis of design and construction method	
	d) Manufacturer's Authorization that the Bidder is an accredited reseller of the proposed Transponder to be supplied.	
	e) Any document such as but not limited to: Brochure, Manuals,and/or Website, from the Manufacturer that the spare parts for the equipment to be supplied will be available for at least ten (10) years.	
	f) Any document from the Manufacturer that the equipment to be supplied should not reach its End of Life in the next 5 years	
21	**Optical Transport Network (Component 3)** Design, supply, delivery and installation, testing, commissioning and integration of twenty-five (25) Dense Wavelength Division Multiplexing (DWDM)/Reconfigurable Optical Add-Drop Multiplexer (ROADM) and amplifier equipment with three (3) fiber-bypass site connections, Network Management System (NMS), support facilities, materials and services needed at identified NGCP and DICT sites	**"U"**
	a) Preliminary Conceptual Design Plans in accordance with the degree of details specified by the Procuring Entity;	
	b) Design and construction methods;	
	c) Value engineering analysis of design and construction method	
	d) Manufacturer's Authorization that the Bidder is an accredited reseller of the proposed Optical Transport Network System to be supplied	
	e) Manufacturer's Authorization that the Bidder is an accredited reseller of the proposed Generator Set to be supplied	
	f) Value engineering analysis of design and construction methodAny document such as but not limited to: Brochure, Manuals,and/or Website, from the Manufacturer that the spare parts for the equipment to be supplied will be available for at least ten (10) years.	
	g) Value engineering analysis of design and construction methodAny document such as but not limited to: Brochure, Manuals,and/or Website, from the Manufacturer that the equipment to be supplied should not reach its End of Life in the next 5 years	
22	**100Gbps IP Transit (Component 4)** Supply, Delivery, Testing, Integration, and Acceptance of 100 Gbps IP Transit from Los Angeles, California, USA Internet Service Providers (herein referred to as "100Gbps IP Transit")	**"V"**
	a) Certificate that the Bidder can provide the required IP Transit	
SECOND ENVELOPE: FINANCIAL COMPONENT		
ABC = PhP 1,250,000,000.00		
23	Financial Bid (Bid Amount in Words and in Numerals. Discount and Performance Security must not be left blank)	**"W"**
24	Bid Prices in the Bill of Quantities	**"X"**
	BOQ: Component 1	
	BOQ: Component 2	
	BOQ: Component 3	

	BOQ: Component 4	
	BOQ: Supplemental	
25	Daywork Rates for materials, labor and equipment	**"Y"**
26	Cash Flow and Payment Schedule	**"Z"**

Note: Check for issuance of Advisories or Bid Bulletins at https://www.bcda.gov.ph/bids/
Each and every page of the Bid Form, including the Bill of Quantities, shall be signed by the duly authorized representative/s of the Bidder. Failure to do so shall be a ground for the rejection of the Bid.

NATIONAL FIBER BACKBONE PHASE 1

PROCUREMENT SCHEDULE*

1	Pre-Procurement Conference	9:00 AM	Wednesday, February 03, 2021	
2	Posting of Invitation to Bid		Wednesday, February 17, 2021	
3	Issuance / Availability of Bidding Docs	8AM to 5PM	Wednesday, February 17, 2021	Sunday, March 14, 2021
		8AM to 12PM	Monday, March 15, 2021	
4	**Pre-Bid Conference**	**10:00 AM**	**Friday, February 26, 2021**	
5	Deadline for Requests for Clarification		Friday, March 05, 2021	
6	Deadline of Issuance of Bid Bulletin		Monday, March 08, 2021	
7	**Deadline of Submission and Receipt of Bids**	**12:00PM**	**Monday, March 15, 2021**	
8	Opening of Technical Bids	1:00 PM	Monday, March 15, 2021	
9	Bidders' Presentation of Project Implementation / Technology	1:00 PM	Tuesday, March 16, 2021	
10	Opening of Financial Proposals	10:00 AM	Friday, March 19, 2021	
11	Detailed Evaluation of Bids		Monday, March 22, 2021	Monday, March 29, 2021
12	Issuance of Notice for Post Qualification to Bidder with LCB		Monday, March 29, 2021	
13	Post Qualification of the Bidder with LCB and Determination of the Bidder with the Lowest Calculated Responsive Bid (LCRB)		Tuesday, March 30, 2021	Tuesday, April 06, 2021
14	Recommendation to HoPE to Award; Issuance of Notice to Other Bidders		Wednesday, April 07, 2021	
15	Approval of BAC Resolution		Friday, April 09, 2021	
16	Issuance of Notice of Award		Tuesday, April 13, 2021	
17	Contract Preparation, Approval and Signing		Tuesday, April 13, 2021	Friday, April 23, 2021
18	Issuance of Notice to Proceed		Friday, April 23, 2021	

Subject to change.

Note: The project duration is 200 calendar days, the 200th day after issuance of NTP is Tuesday, November 09, 2021