

*Tender Fee: Rs. 5,000/-  
(Non-Refundable)*

**TENDER FORM**  
**(REVISED)**

**Tender # IT/34/23-24**  
**Provide, Supply and Commission Optical  
Fibre Cable and Passive Work**

Date of Issue : May 21, 2024  
Revised Last Date of Submission : June 21, 2024 (3:00 PM)  
Revised Date of Opening of Tender : June 21, 2024 (3:30 PM)

Company Name: \_\_\_\_\_

NTN: \_\_\_\_\_, SRB Registration Number: \_\_\_\_\_

GST Registration Number: \_\_\_\_\_

Pay Order / Demand Draft # \_\_\_\_\_, Dated: \_\_\_\_\_

Amount of Rs. \_\_\_\_\_, Drawn on Bank: \_\_\_\_\_

**Notice Inviting Tender (NIT)****Tender Notice**

The Institute of Business Administration, Karachi (IBA) invites sealed bids from active taxpayers of manufacturers/firms/distributors/suppliers registered with relevant tax authorities for the following tender.

<b>Tender Title (Ref. No.)</b>	<b>Procedure</b>	<b>Bid Security</b>
Provide, Supply and Commission Optical Fibre Cable and Passive Work (IT/34/23-24)	Single Stage One Envelope	2%
<b>Tender Fee and Dates</b>		
▶ <i>Tender Document Fee:</i>	Rs. 5,000/-	
▶ <i>Issuance start date:</i>	May 21, 2024, at 9:00 AM	
▶ <i>Issuance end date &amp; time:</i>	June 21, 2024, at 3:00 PM	
▶ <i>Submission date &amp; time:</i>	May 21, 2024, to June 21, 2024, from 9:00 AM to 3:00 PM	
▶ <i>Opening date and time:</i>	June 21, 2024 at 3:30 PM	

Tender Documents may be collected after submission of the paid fee challan from the Office of **Head of Procurement, Fauji Foundation Building, IBA Main Campus, University Enclave, Karachi** on any working day (Monday to Friday). Alternatively, the tender document can be downloaded from the website. The Tender fee challan is to be generated from the IBA website <https://www.iba.edu.pk/tenders> which may be deposited in any branch of Meezan Bank Ltd. Sealed bids should be dropped in the Tender Box placed at the Security Office, Gate # 4, IBA Main Campus, University Enclave, Karachi and will be opened on the same date and venue in the presence of the bidders' representatives who may wish to attend. In case of a holiday, the tender shall be opened/received on the next working day at the same place and time. Bid Security in the form of a Pay Order or Demand Draft has to be submitted in favour of "IBA Karachi" along with the Tender.

Kindly mention "Tender Number" at the top left corner of the envelope.

**N.B.** IBA Karachi reserves the right to reject any bid or cancel the bidding process subject to the relevant provision of SPP Rules 2010.

**REGISTRAR**

IBA, Main Campus, University Enclave, Karachi 75270

111-422-422 Fax (92-21) 99261508

Contact Person Sr. Executive Procurement on 38104700 ext: 2152

Email [tenders@iba.edu.pk](mailto:tenders@iba.edu.pk) Website <https://www.iba.edu.pk/tenders>

SPPRA Website: <https://ppms.pprasindh.gov.pk/PPMS/public/portal/notice-inviting-tender>

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## 1. Introduction

Dear Tenderer

Thank you for the interest you have shown in response to the IBA's advertisement which floated on IBA and SSPRA websites on May 21, 2024, to "Provide, Supply and Commission Optical Fibre Cable and Passive Work".

The Institute of Business Administration, Karachi (IBA) is the oldest business school outside North America. It was established in 1955 with initial technical support provided by the Wharton School of Finance, University of Pennsylvania. Later, the University of Southern California (USC) set up various facilities at the IBA and several prominent American professors were assigned to the IBA. The course contents, the curriculum, the pedagogical tools and the assessment and testing methods were developed under the guidance of reputed scholars from these two institutions. IBA has zealously guarded the high standards and academic traditions it had inherited from Wharton and USC while adapting and adjusting them over time.

We expect to avail services/works/items of high standards that meet our prime and basic specifications through this transaction.

Please contact Senior Executive Procurement on 38104700 ext: 2152 for any information or query.

Thank you.

-sd-

**Registrar**

## 2. Instructions

### (a) **Sign and Stamp**

It is necessary to fill in the Tender Form meticulously and sign and stamp every page. Moreover, attach the required supporting documentation according to the requirement. The tender document will be accepted ONLY on the IBA's prescribed Tender Document available on the IBA's Website.

### (b) **Filling of Tender Form**

It is mandatory to fill the Tender Form in writing in ink or type. Do not leave any column/item blank. If you want to leave the item/column unanswered please, write 'Doesn't Apply/Doesn't Arise'. If you need more space, please attach a piece of paper and clearly mention the item/column name or number etc. that referred to the column/item of the Tender Form.

### (c) **Collection of Tender**

You can collect the Tender Document from the office of the Head of Procurement, Ground Floor, Fauji Foundation Building, IBA Main Campus, University Enclave, Karachi from May 21, 2024, to June 21, 2024, during working hours 9:00 AM to 3:00 PM.

### (d) **Tender Number**

Please mention "Tender Number" at the top left corner of the envelopes. IBA, Karachi may reject any bid subject to the relevant provision of SPP Rules 2010 and may cancel the bidding process at any time before acceptance of the bid or proposal as per Rule-25(i) of said rules.

### (e) **Communication**

Any request for clarification regarding technical specifications should be submitted in writing to:

Contact Person (IBA): Senior Executive Procurement  
Institute of Business Administration,  
Main Campus, University Enclave,  
Karachi  
Tel #: 021 38104700; Ext 2152  
Email: [tenders@iba.edu.pk](mailto:tenders@iba.edu.pk)

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Stamp and Signature

**(f) Submission of Documents and Address**

Separate envelopes clearly labelled 'Original Document' and 'Bid Security' must be submitted on or before the last date to submit the tender documents. Tender Documents can be dropped in a Tender Box placed at the Security Office, Gate # 4, IBA Main Campus, University Enclave, Karachi till 3:00 PM on June 21, 2024. **Tender Documents received by fax or email will not be accepted.**

**(g) Rights**

Competent authorities reserve the right to accept or reject any quotation/tender without any reason thereof.

**(h) Point of Delivery**

Supply and Services will be delivered at the IBA Store Main Campus University Enclave Karachi. IBA is not liable to pay any Custom duty, Levies, Taxes, Demurrage or any other charges, Warehousing, Logistics etc.

**(i) Location of Installation**

Equipment will be delivered at IBA Stores, Main Campus, University Enclave, University Road, Karachi and IBA Karachi. IBA will not be liable to pay any Custom duty, Levies, Taxes, Demurrage or any other charges, Warehousing, Logistics etc.

**(j) Clarification / Proof**

Please submit copies of certificates of registration with the Sales Tax and Income Tax departments. The manufacturer/firms/companies/distributors/suppliers should also provide a copy(ies) of the certificate(s) etc. as proof of their claim.

**(k) Conditional / Optional / Alternate Bids**

Such bids will not be accepted.

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Stamp and Signature

### 3. Bidding Data

- (a) **Name of Procuring Agency:** Institute of Business Administration, Karachi.
- (b) **Brief Description of Works:** Provide, Supply and Commission Optical Fibre Cable and Passive Work.
- (c) **Procuring Agency's Address:** Main Campus, University Enclave, Karachi.
- (d) **Amount of Bid Security:** Bid Security of 2% of the total amount/cost will be submitted along with Tender Documents in the shape of PAY ORDER / DEMAND DRAFT only in the name of the Institute of Business Administration, Karachi.
- (e) **Period of Bid Validity (days):** Forty-five (45) Days.
- (f) **Deadline for Submission of Bids along with time:** The last date for submitting the Tender Document in a sealed envelope is June 21, 2024, by 3:00 PM in the Tender Box placed at the Security Office, Gate # 4, IBA Main Campus, University Enclave, Karachi. The Tender will be opened on the same day at 3:30 PM in the presence of representatives who may care to attend.
- (g) **The Venue, Time, and Date of Bid Opening:** The Tender will be opened on June 21, 2024, at 3:30 PM at IBA Main Campus, University Enclave, Karachi in the presence of representatives who may care to attend.
- (h) **Liquidity damages:** Liquidated damages 2% per month of the total contract amount will be imposed on delayed delivery.
- (i) **Deposit Receipt No:** \_\_\_\_\_ **Dated:** \_\_\_\_\_  
**Amount** (in words and figures): \_\_\_\_\_  
**Pay Order / Demand Draft #:** \_\_\_\_\_, **Amount: Rs.** \_\_\_\_\_  
**Drawn on Bank:** \_\_\_\_\_, **Dated:** \_\_\_\_\_

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 Stamp and Signature

## 4. Terms and Conditions

### a. **Bid Security**

Bid Security, in the shape of a bank draft/pay order in the name of “**Institute of Business Administration**” Karachi, equivalent to 2% of the total cost of the bid, should be submitted along with the tender documents.

### b. **Performance Security**

The successful bidder should provide 5% Performance Security of the total value of the Purchase Order in the form of a Pay Order or bank guarantee prior to the signing of the Contract. The Performance Security shall extend at least three months beyond the completion of the contract.

### c. **Validity of the Tender**

All proposals and prices shall remain valid for 45 days from the closing date of the submission of the proposal. However, the Bidders are encouraged to state a longer period of validity for the proposal.

### d. **Currency**

All currency in the proposal shall be quoted in Pakistan Rupees (PKR).

### e. **Ownership**

The ownership of all products and services rendered under any contract arising as a result of this tender will be the sole property of IBA.

### f. **Arbitration and Governing Law**

This tender and any contract executed under this tender shall be governed by and construed in accordance with the laws of Pakistan. The IBA and all bidders responding to this tender and parties to any contract executed pursuant to this tender shall submit to the exclusive jurisdiction of the Pakistani courts. The arbitration proceeding will be governed by the Arbitration Act, of 1940, and the substantive and procedural law of Pakistan. The venue shall be Karachi.

### g. **Acceptance of Tender**

The IBA reserves the right not to accept the lowest and to annul the bidding process without assigning any reason whatsoever. IBA Karachi may ask to provide a demo unit that the supplier quoted in the tender. After the final inspection of the unit, the decision will be made.

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Stamp and Signature



**h. Support Capabilities**

The Manufacturers/Firms/Companies/Distributors/Suppliers should indicate the support capabilities for all the hardware provided during the course of the warranty.

**i. Compliance with Specifications**

The Bidders shall provide information as per requirements given in BoQ. However, Bidders can submit multiple solutions. Bidders may not propose/supply any kind of refurbished hardware equipment/ components in their proposals.

**j. Bid Evaluation:**

The bid will be considered as the Most Advantageous on most closely conforming to evaluation criteria and other conditions specified in the bidding document and having the Least cost.

**k. Cancellation**

IBA reserves the right to cancel any or all of the above items if the material is not in accordance with its specifications or if the delivery is delayed.

**l. Invoice**

The invoice/bill should be submitted to the Procurement Department.

**m. Stamp Duty**

The Stamp duty of 0.35% against the total value of the Purchase Order will be levied accordingly.

**n. Delivery and Commissioning Time**

The items should be delivered within 30 days with installation and commissioning from the date of Letter of acceptance or Purchase/Work Order.

**o. Physical Inspection**

Physical Inspection at the manufacturer/distributor site may be carried out.

**p. Liquidity Damages**

Liquidity damages at the rate of 2% per month of the total contract amount will be imposed on delayed delivery or work, up to 10% of the total contract value.

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Stamp and Signature

**q. Increase in Price**

No increase in the value of mentioned items and services in BoQ, will be accepted on account of either unit price, total price, any or all other charges, duties, taxes, scope of supply and or any other head of account shall be allowed.

**r. Increase in Taxes**

Any increase in taxes, the IBA should not be responsible, but, if any taxes are reduced, the IBA should get its benefit.

**s. Location of Supply and Works**

Supply and Commissioning of Optical Fibre Cable and Passive Work will be required at IBA, Main Campus, University Enclave, University Road, Karachi. IBA not liable to pay any Custom duty, Levies, Taxes, Demurrage or any other charges, Warehousing, Logistics etc.

**t. Payment**

Payment will be made within 30 working days after complete delivery and installation as per BoQ and submission of Invoices.

**u. Demonstration**

The Successful bidder should give a demonstration of the proposed solution. The bidder would be required to demonstrate all (or majority) of the items mentioned below:

- i. Demonstrate their product or service offering to confirm its effectiveness for use. In this demonstration, the bidder will be required to use his own internal data.
- ii. Explain various details of their RFP.
- iii. Verify their qualifications for undertaking the work.
- iv. Confirm or specify particulars of any part of their RFP on which may require clarification.

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Stamp and Signature

## 5. Integrity Pact

- (a) Its intention is not to obtain the Provide, Supply and Commission work of any Contract, right, interest, privilege, or other obligation or benefit from the IBA or any administrative or financial offices thereof or any other department under the control of the IBA through any corrupt practice(s).
- (b) Without limiting the generality of the forgoing the Bidder represents and warrants that it has fully declared the charges, fees, commission, taxes, levies etc, paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within the IBA directly or indirectly through any means any commission, gratification, bribe, gifts, kickback whether described as consultation fee or otherwise, with the object of obtaining or including the Provide, Supply and Commission or service contract or order or other obligations whatsoever from the IBA, except that which has been expressly declared pursuant hereto.
- (c) The Bidder accepts full responsibility and strict liability for making any false declaration/statement, not making full disclosure, misrepresenting facts or taking any action likely to degrade the purpose of declaration, representation and warranty. It agrees that any contract/order obtained aforesaid shall without prejudice to any other right and remedies available to the IBA under any law, contract, or other instruments, be stand void at the discretion of the IBA.
- (d) Notwithstanding any right and remedies exercised by the IBA in this regard, Bidder agrees to indemnify the IBA for any loss or damage incurred by it on account of its corrupt business practice and further pay compensation to the IBA in any amount equivalent to the loss of any commission, gratification, bribe, gifts, kickback given by the company/firm/supplier/agency/bidder as aforesaid for the purpose of obtaining or inducing Provide, Supply and Commission and /work/service or other obligation or benefit in whatsoever from the IBA.

### **Note:**

**This integrity pact is a mandatory requirement other than auxiliary services/works.**

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Stamp and Signature

## **6. Request for Proposals**

### **6.1 Project Overview**

IBA (Institute of Business Administration) is planning to install and upgrade an optical network infrastructure in their building.

This project involves providing the necessary network passive components, as well as handling their installation, configuration, and testing.

Bidders are invited to submit their proposals and solutions to this request. Bidders must demonstrate their experience and knowledge through their technical proposals including a comprehensive description of the proposed solution that meets the technical requirements of IBA as described in this RFP.

The bidder shall guarantee that all parts to be provided are going to be original parts approved by international organizations. The bidder shall also make sure that he/she reads this document and that he/she shall provide his proposal without any preconditions on the execution of the scope of work listed herein. The vendors must provide in their proposals a detailed scope of work to clearly state in detail the activities which will be conducted by the bidder/vendor/service provider and how the proposed network solution will address the needs.

### **6.2 Project Objectives**

The objective of this RFP is to upgrade the backbone fibre network for the location marked in the ork design, the department's connectivity via fibre optic backbone and sports facility connectivity via composite cable for enhancement and improvement of the l network and future bandwidth requirement keeping international standard deployment procedure on top.

The recommended cabling solution must be:

- Modular
- Expandable
- Simple and Manageable
- Resilient
- As per international standards

IBA is looking to procure a fibre backbone and Composite cable that is:

- Standard/ Compliant Solution.
- LSOH/FRNC fibre outdoor loose tube direct buried or duct type fibre.
- Stranded Single Mode (OS2) Fibre Optic Solution designed for outdoor use for campus, city and intercity backbones in duct and direct burial installations.
- Highest density fibre Patch Panels, preferably 96core in 1U if needed in future.

- SM E9/125 SMF28e+(OS2)
- Fibre system to support 100G speeds.
- ANSI/TIA/EIA-568
- Commercial Building Telecommunications Cabling Standard
- 25 years System Performance warranty.
- 1-year physical product warranty.
- End-to-End Solution from a single brand to ensure a 25-year System performance warranty should be offered (i.e. for a complete Physical Link).

The purpose is to develop Campus Backbone cabling and Composite cable for the Football and Cricket Stadiums in compliance with:

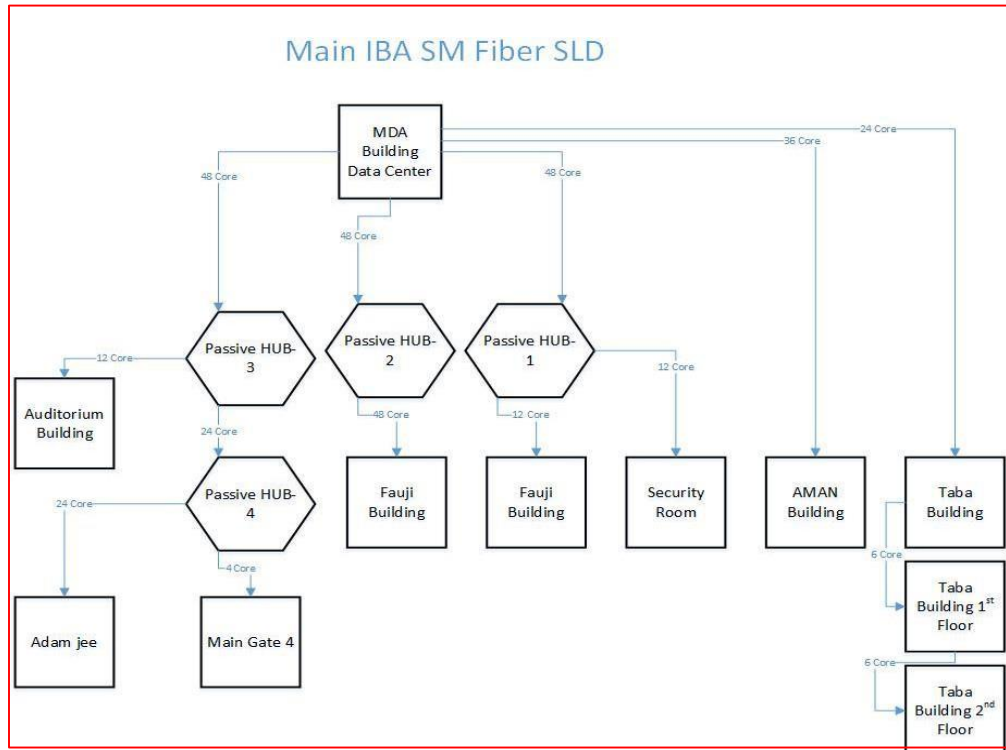
- ANSI/TIA-568-C.3 OS2 single-mode optical fibre cabling Standard for Campus Cabling.
- ISO/IEC 24764 IT Generic Cabling for Data Centres.
- EN 50173-1 Information Technology – generic Cabling Systems – General requirements.
- EN 50173-6 Information Technology – generic Cabling Systems – Outside Plant / Distributed Building Services.
- BS EN 50174-3:2003– Installation technology. Cabling installation. Installation planning and practices outside buildings / out-site plant Standards.
- EN 50174-2. Standard for the distributor spaces and pathways.
- TIA 569 Standard for the distributor spaces and pathways.
- EN 60794 EN 60793-2-10, EN 60793-2-50 and EN 60793-1-44 Standard for covers numerical aperture and measurement standards.

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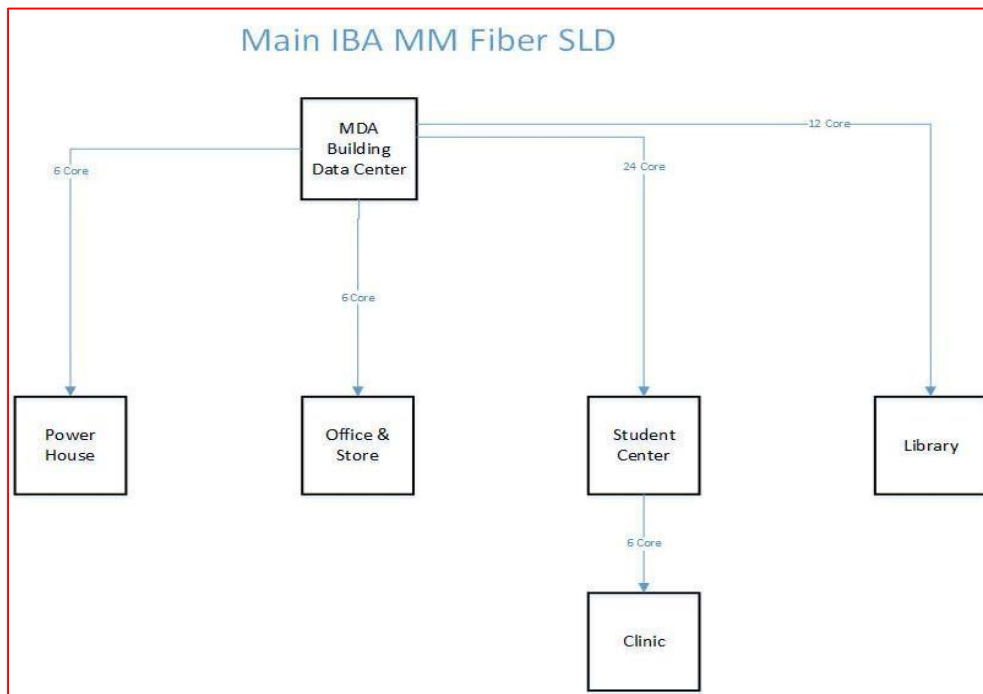
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### 6.3 Proposed Network SLD

#### 6.3.1 Main IBA SM Fibre SLD

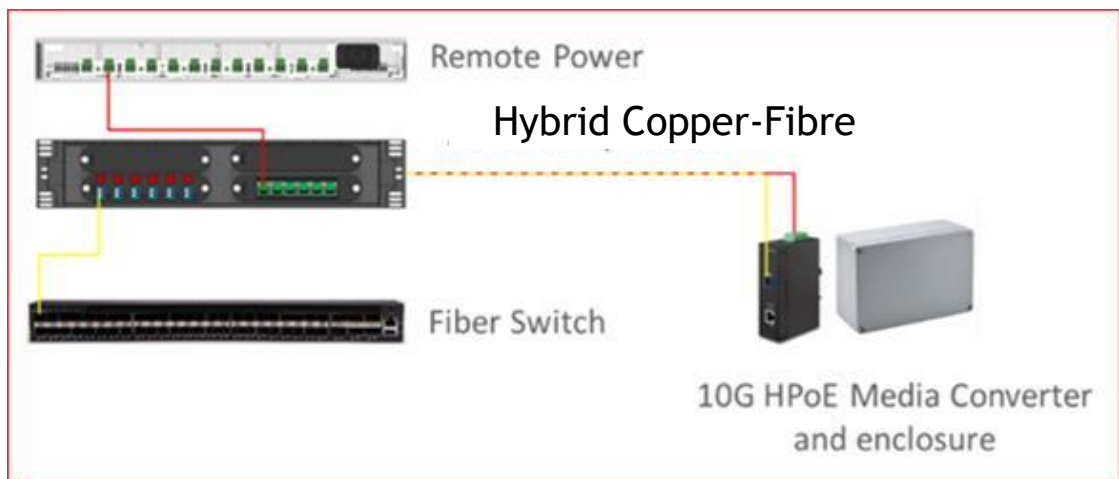
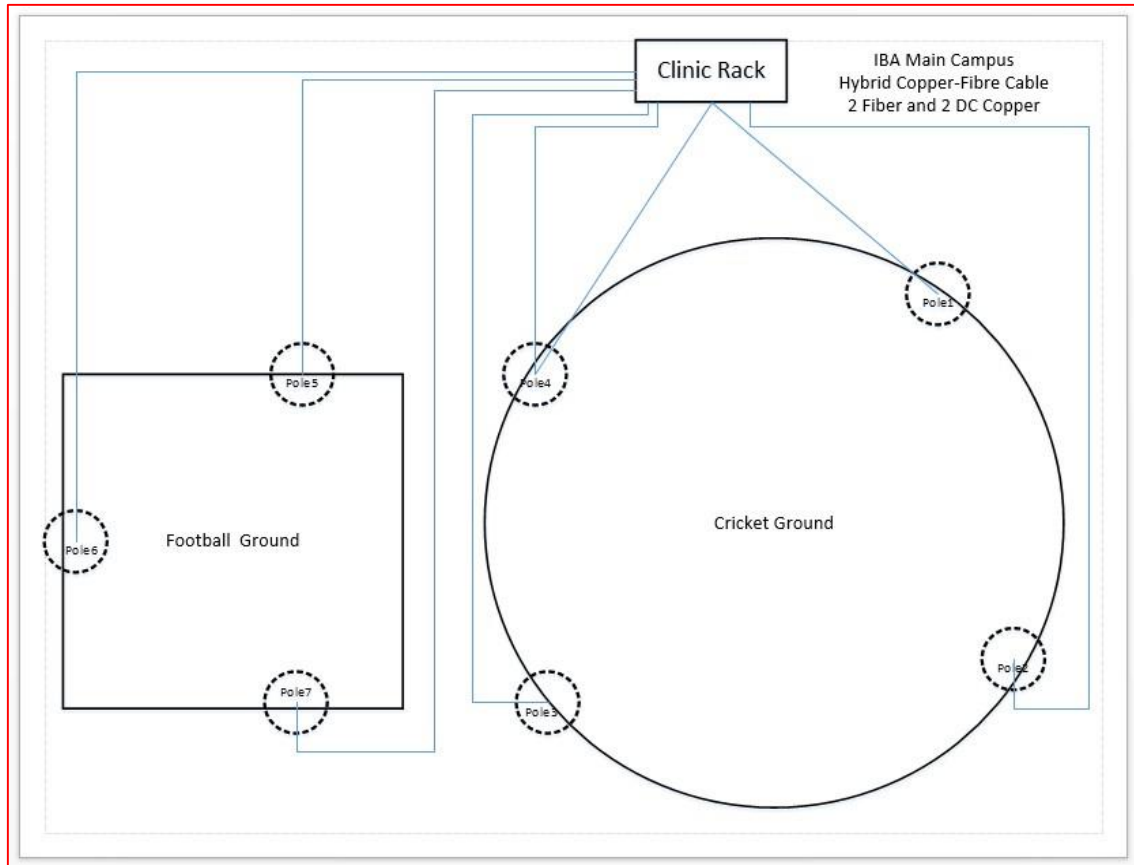


#### 6.3.2 Main IBA MM Fibre MM



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### 6.3.3 Main IBA (Hybrid Copper-Fibre) SLD



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## 6.4 Scope of Work

### 6.4.1 Instructions for Bidder

The bidder should propose cabling infrastructure considering or covering, but not limited to the following:

- End-to-end project delivery within the required time will be the responsibility of Bidder.
- The Bidder will submit the detailed low-level design reference for the Project.
- The Bidder will submit the detailed fibre route layouts (Single line diagram) and Rack Face elevation layouts with the equipment placement.
- The Bidder should assign a fulltime onsite project manager for this project.
- Share complete component details and specification sheets.
- Dedicated resources to be available from Bidder during setup and implementation.
- It will be the responsibility of the Bidder to provide any parts which it feels are needed to provide a working standard industry-certified structured cabling solution.
- Bidder shall align proper Product / Services Certified team of specialists / Installation for implementation work as per Work standards.
- IBA and its Project team reserve the right to request for replacement of any material supplied and found to be faulty or not performing as expected. Such replacement will be at the bidder's cost (including shipment and installation) and request the bidder to conduct further random tests of cables, these tests could include OTDR testing of Fibre cables and cleanliness checking of Fibre cables, patch panels and other related Accessories for this Project.
- Submit the Technical and Financial Proposal separately in a single envelope.
- Submit a Financial proposal with itemized prices of Solution, installation & commissioning charges separately.

### 6.4.2 Solution Description

The solution is designed with Single mode (OS2) SM E9/125 SMF28e+, Multimode 50 µm MM OM3 Clear Curve to provide a solution that can support:

- Distribution: Department backbone cable to connect with respective data centre in parallel with existing network.
- Flexibility: Ability for connectivity for the Department Building from the nearest Passive Hub or Data Center Directly using the cabling solution.
- Scalability: The solution provided is using high-density fibre patch panels with the ability to add more Cables to increase the capacity.
- Modularized: Ability to add single-mode Links in any patch panel.
- Performance: SM E9/125 SMF28e+ (OS2, Patch Panels and other related Accessories to support any current and future requirements.

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## 6.5 Redundancy

- Bidder needs to make sure redundancy at level up to passive Hub's Passive design will be reviewed and bidders with better and optimal option/s will be considered technically. (Optional).
- Each Passive hub should have at least 30% spare for future expansion.

## 6.6 Solution Requirement

The details of the structured cabling proposed by the bidder should cover, but not be limited to the following:

- Supply of structured fibre cabling, patch panels, and other related Accessories building attachments, labels etc. meeting standards for complete Solution as shared above.
- Structured cabling solution to be built using the star topology where all Main Link Fibre Optic cables are distributed from a central point (Data Center) to a Passive Hub (PH).
- In the Data Center (DC) the solution proposed should be a universal polarized system and the highest density per U available as required Core Capable Closet Connector Type with LC Duplex adaptors Patch Panels / ODF, at least 30% Spare Core / Capability required for future expansion.
- In Departments (Dept.) the solution proposed should be a universal polarized system and the highest density per U available as required Core sliding Type Patch Panel / ODF with LC Duplex adaptors Patch Panel having Pigtail splicing, field connectorisation, at least 30% Spare Core / Capability required for future expansion.
- Different trigger colour codes / Tagging Schemes should be suggested for different types of Links for all Fibre Optic cables in compliance with ANSI TIA 606- B Cable Labelling Standards.
- Installation, testing, maintenance and support for all provided components.
- Labelling and Documentation of cable schemes/cable layout database / detailed cable bundle will be in the bidder's scope of work.
- Project Management and coordination with other active & passive component bidders to meet the overall project deadlines.
- All Training & knowledge should be transferred within 15 days of the successful execution of the project.
- Layout of connectivity for Optic Fibre from Data Center (DC) to Passive Hub (PH) and Departments (Dept.) should be submitted.
- A comprehensive sheet for the number of U's required in each rack for fibre structured cabling solution should be provided.
- Layout/design of equipment placement in racks as per actual should be submitted along with the solution.

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Stamp and Signature

## 6.7 Fibre Cabling

The Infrastructure is based on the Backbone connectivity of the central Data Center to Department Buildings' optical cabling systems specifically designed for the Outside Plant environment.

Must have high-density panels with speed, simplicity and a clear migration path to meet future requirements. The Fibre solution strengthens the network in the following key areas:

- SM E9/125 SMF28e+ (OS2 of any terrestrial grade single-mode fibre with a maximum attenuation of 0.17 dB/km at 1550 nm.
- Fibre Optic Cable should ROSH Compliance and G652.D LT 2.3 Standard.
- ITU-T G.652.D and G.657.A1-compliant 200 micron single-mode fibre with an 8-9 micron Mode-Field Diameter (MFD), SM E9/125 SMF28e+ (OS2 and enhanced bend performance.
- 50 µm MM OM3 ClearCurve.
- Composite fibre SMF-28® Ultra fibre including 2 Conductor: 12 to 16 AWG.
- Increased asset utilization, with reduced jumper complexity and the elimination of stranded cabling assets.
- Technology adoption due to 100% fibre utilization without the need for conversion modules, which leads to cost and loss savings.
- Risk avoidance, providing a simple path to 10G, 40G, even 100G.
- Fibre system must be Low Smoke (IEC 61034) Zero Halogen (IEC 60754-1), and non-corrosive to IEC 60754-2 (FRNC).
- Fibre inside all the fibre components (Cables, trunks, patch cords, etc.) should be bend-insensitive fibre.
- Patch cords should be LC Duplex with a reversing polarity option.
- TIA 569 Standard should be compliant for the distributor spaces and pathways.
- All labelling should be compliant with ANSI-TIA-606-B The Updated Labelling Standard.
- OTDR Test report for Each Core must be submitted after completion of Work.

## 6.8 Optical Fibre Product

### 6.8.1 SMF-28e+ Optical Fibre

SMF-28e+ fibre is a comprehensive single-mode fibre for metro and access networks, including FTTH and CATV. This standard single-mode fibre is ITU-T G.652.D-compliant and fully compatible with legacy single-mode fibres. SMF-28e+ fibre is built on our solid foundation of quality and proven performance.

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Stamp and Signature

### **6.8.2 SMF-28 Ultra Optical Fibre**

SMF-28 Ultra fibre is fully compliant with ITU-T G.652.D as well as ITU-T G.657.A1. This full-spectrum fibre has industry-leading attenuation and improved microband performance and is designed for use in long-haul, metro, access, and FTTH networks. SMF-28 Ultra fibre maintains full backward compatibility with traditional standard single-mode fibres, which means no trade-offs and splice performance that is the same as the installed base of SMF-28e+ fibre.

### **6.8.3 ClearCurve Multimode Optical Fibre**

ClearCurve ultra-bendable, laser-optimized multimode fibre delivers superior macro bending performance and meets the high-bandwidth requirement for today's communications network. It is designed to withstand tight bends with substantially less signal loss in challenging cabling routes. ClearCurve multimode fibre is fully standards-compliant and backwards compatible with the installed base.

## **6.9 Design Principles**

### **6.9.1 Reliability**

Reliability is crucial for passive networks. In network planning redundant network connections are used to improve the reliability of the network, the entire passive network solution should be designed considering this requirement.

### **6.9.2 Scalability**

The solution should be scalable.

## **6.10 Design Standards**

All components must comply with industry standards. Standard interfaces should be flexible expansion and interconnect be suitable with external systems.

## **6.11 Quality Assurance**

- i. All components, unless otherwise stated herein, should carry a manufacturer's replacement warranty of 25 years.
- ii. Principle having at least 1 distributor in Pakistan.
- iii. No aftermarket components will be accepted as an approved equal.
- iv. The contractor will be the primary contact for warranty responsibility for all equipment, material and work furnished and installed under this specification.
- v. In the presence of the owner representative, test-operate all functions of the installation, doing any explanation necessary of the operation and relevant safety features.

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### **6.12 Product Availability & Price Lock**

The bidder should describe its access to products and ability to fill a large number of orders, including installation services. IBA would expect the successful bidder to maintain stock that can be 'repeat ordered' based on the locked prices.

### **6.13 Smart Hands Service**

The bidder will be expected to quote smart hands service which will enable IBA to seek its service based on the agreed rates per job or man-day, however, it's locked during the commercial negotiations. The bidder must manage a team, dedicated to IBA based on the Project.

### **6.14 Project Implementation**

The bidder should provide a project plan that describes how the bidder intends to implement the project. Specifically, the bidder should provide the following information regarding methodologies and organization:

- i. Team structure and role
- ii. Project Evaluation (on-time installation, customer satisfaction, and issue resolution)
- iii. Transition Plan

### **6.15 Customer Service**

Describe the level of customer service that will be provided, including hours of operation, procedures that will ensure consistency, and problem escalation and resolution. The description should include, but is not limited to:

- i. Telephone customer service and onsite service organizational structure.
- ii. Contact process (phone, email etc.).
- iii. Follow-up process.
- iv. Internal procedures to track customer service contact and resolution.
- v. Escalation process to resolve outstanding customer service and maintenance issues.
- vi. Remedies for not meeting the committed response time.

### **6.16 Compliance Statement**

- i. Bidder must have experience in deploying similar types of network infrastructure.
- ii. Bidder must have a registered office in Pakistan.
- iii. The passive cabling brand with a strong local, legal presence will be given preference.
- iv. Bidder must be authorized partner of the Brand and must not be a distributor.
- v. Fibre Core must be of SM E9/125 SMF28e+ (OS2) bends sensitive fibre.
- vi. The principal certificate to confirming supply of Core components as part of the Solution should originate from either Corning or Fujikura

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Stamp and Signature

- vii. Fibre cords LC should have the option of reverse polarity without swapping cores inside housing or ODF.
- viii. Module design must be supported to Tap out Modules for future up gradation.
- ix. An authorisation letter of principal in favour of the bidder mentioning /addressing IBA.
- x. Authorization letter of Distributor in favour of bidder mentioning/confirming 20% excess fibre, composite cable and modules readily available after the first installation for the next 6 months.
- xi. Preference will be given to the principal company having more than 1 local distributor/ stockiest, confirmation will be needed on the principal letterhead or their website.
- xii. System performance warranty (25 Years) from the Principal in the name of IBA is must after the completion of work.
- xiii. Factory test report to be furnished along with the supply of Fibre Cables.
- xiv. OTDR Test report for Each Core must be submitted after completion of Work.
- xv. Bidder must submit technical specification sheets and one sample of each of the products offered if requested by IBA.
- xvi. Bidder must submit compliance statement clause by clause in the technical submittal.

## 6.17 Next Steps

Successful bidders may be invited and asked for:

- Technical Deep Dive on Solution: On premises.
- Solution Demonstration: Ideally on premises but can be virtual.
- Real-life implementation demo and visit of the same size and scope: The customer technical team will visit for technical evaluation if needed; however, the visit will not be a commitment to the award of the Job.
- Interaction facilitation with technical and business users of the same size and scope: can be on-premises, on bidders' premises or virtual (whatever is more convenient for all the parties).

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## 6.18 Technical Specifications

### 6.18.1 Selected Transmission Performance

	OM1	OM3	OM4	OS2
Optical Fiber Type	62.5 μm Multimode	50 μm Multimode	50 μm Multimode	Single-Mode
Wavelength (nm)	850/1300	850/1300	850/1300	1310/1550
Maximum Loose Tube Attenuation (dB/km)	3.4/1.0	3.0/1.0	3.0/1.0	0.4/0.3
Maximum Tight-Buffered Cabled Attenuation (dB/km)	2.8/1.0	2.8/1.0*	2.8/1.0*	0.65/0.5
Minimum Overfilled Launch Bandwidth (MHz·km)	200/500	1500/500	3500/500	-/-
Minimum Effective Modal Bandwidth (MHz·km)	2200/-	2000/-	4700/-	-/-

	OM1	OM3	OM4	OS2
1 Gigabit Ethernet Distance (m)	300/550	1000/600	1000/600	5000/-
10 Gigabit Ethernet Distance (m)	33/-	300/-	550/-*	10000/40000
40 Gigabit Ethernet Distance (m)	-/-	100/-	150/-	10000 (40GBASE-LR4)
100 Gigabit Ethernet Distance (m)	-/-	100/-	150/-	10000 (100GBASE-LR4) 40000 (100GBASE-ER4)

### 6.18.2 Passive Components

Provide and install all-optical network infrastructure segments including:

- Fibre Optic Cable SM & MM
- ActiFi Composite Cable
- Fibre Patch Panel (ODF)
- DC Power Supply
- Media Converter

## 6.19 Fibre Optic Cable

### 6.19.1 Multimode Fibre Optic Cable

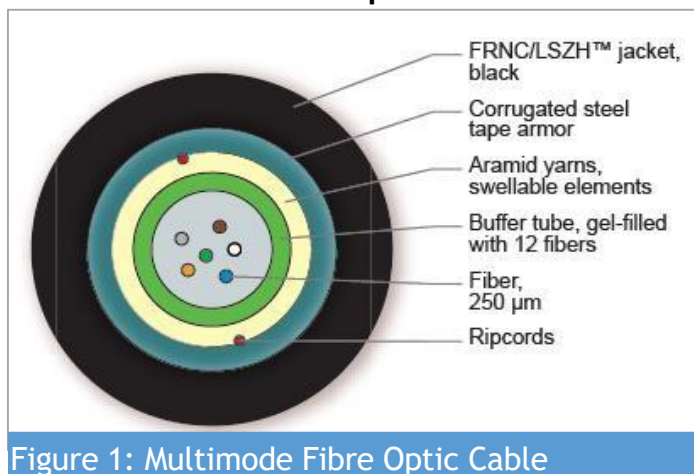


Figure 1: Multimode Fibre Optic Cable

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<b>MULTIMODE FIBRE OPTIC CABLE</b>	
<b>General Specifications</b>	· Environment: <u>Indoor/Outdoor</u>
	· Cable type: <u>Single Tube</u>
	· Product type: <u>Corrugated steel armour</u>
	· Fibre category: <u>50 µm MM (OM3)</u>
	· Flame rating: <u>LSZH/FRNC</u>
	· Coding EN 60794-1-1 (DIN VDE 0888-100-1): <u>U-DQ(ZN)(SR)H</u>
<b>Standards</b>	· Application: <u>Direct Buried, Duct, Vertical Riser</u>
	· Flame retardant: <u>IEC 60332-1-2</u>
	· Reaction to fire: <u>EN 50575 &amp; EN 13501-6</u>
	· Smoke density: <u>IEC 61034</u>
	· Halogen content: <u>IEC 60754-1</u>
	· Non-corrosive: <u>IEC 60754-2</u>
	· Reaction to fire: <u>CPR (Eca)</u>
<b>Environmental Conditions</b>	· RoHS: <u>2011/65/EU</u>
	· Water blocking: <u>IEC 60794-1-2 F5</u>
	· Temperature range, installation: <u>-5 °C to 50 °C</u>
	· Temperature range, storage: <u>-40 °C to 75 °C</u>
<b>Cable Design</b>	· Temperature range, operation: <u>-30 °C to 75 °C</u>
	· Temperature range, storage: <u>-40 °C to 75 °C</u>
	· Cable marking: <u>Metre - CE 17 EN 50575 Eca</u>
	· Number of ripcords: <u>2</u>
	· Outer jacket colour: <u>Black</u>
	· Outer jacket material: <u>(FRNC/LSZH) I</u>
	· Outer jacket thickness: <u>1.5 mm</u>
	· Tensile strength Layer 1: <u>Aramid yarn</u>
	· Tensile strength Layer 2: <u>Corrugated steel tape armour</u>
	· Buffer tube diameter: <u>3 mm</u>
	· Buffer tube water blocking: <u>Thixotropic gel</u>
<b>Mechanical Specifications</b>	· Fibre colouring: <u>Blue, orange, green, brown, grey, white</u>
	· Crush resistance: <u>2000 N/10 cm</u>
	· Max. tensile strength for installation: <u>1000 N</u>
	· Min. bend radius installation: <u>150 mm</u>
	· Min. bend radius operation: <u>110 mm</u>
<b>Optical Characteristics</b>	· Nominal outer diameter: <u>7.5 mm</u>
	· Fibre Core: <u>Corning, Fujikura or equivalent</u>
	· Fibre Category: <u>50 µm MM OM3 ClearCurve® or equivalent</u>
	· Minimum effective modal bandwidth: <u>2000 MHz*km</u>
	· Maximum Attenuation: <u>2.8 dB/km / 1.0 dB/km</u>
	· Min. (OFL) bandwidth: <u>1500 MHz*km / 500 MHz*km</u>
	· Serial 1 gigabit Ethernet: <u>1100 MHz*km / 600 MHz*km</u>
	· Serial 10 gigabit Ethernet: <u>300 MHz*km / 333 MHz*km</u>
	· Typical attenuation: <u>2.4 dB/km / 0.8 dB/km</u>
	· Wavelengths: <u>850 nm / 1300 nm</u>
· Induced Attenuation: <u>For 7.5 mm radius &lt; 0.2 db</u>	

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### 6.19.2 Single mode Fibre Optic Cable

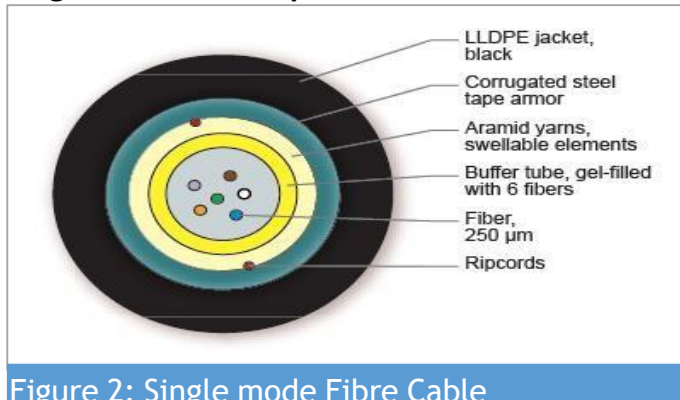


Figure 2: Single mode Fibre Cable

SINGLEMODE FIBRE OPTIC CABLE	
<b>General Specifications</b>	· Environment: Outdoor
	· Cable type: Single Tube
	· Product type: Corrugated steel armor
	· Fibre category: SM E9/125 SMF28e+ (OS2)
	· Coding: EN 60794-1-1 (DIN VDE 0888-100-1)
<b>Standards</b>	· Application: Direct Buried, Duct
	· RoHS: 2011/65/EU
<b>Environmental Conditions</b>	· Water blocking: IEC 60794-1-2 F5
	· Temperature range, installation: -5 °C to 50 °C
	· Temperature range, storage: -25 °C to 70 °C
<b>Cable Design</b>	· Temperature range, operation: -20 °C to 60 °C
	· Cable marking: Metre - CE 17 EN 50575 Eca
	· Number of ripcords: 2
	· Outer jacket colour: Black
	· Outer jacket material: Linear Low Density Polyethylene
	· Outer jacket thickness: 1.5 mm
	· Tensile strength Layer 2: Corrugated steel tape armour
<b>Mechanical Specifications</b>	· Buffer tube diameter: 3 mm
	· Fibre colouring: Blue, orange, green, brown, grey, white
	· Crush resistance: 2000 N/10 cm
	· Max. tensile strength for installation: 1000 N
	· Min. bend radius installation: 150 mm
<b>Optical Characteristics</b>	· Min. bend radius operation: 110 mm
	· Nominal outer diameter: 7.5 mm
	· Fibre Core: Corning, Fujikura
	· Fibre Category: E9 SMF-28e+® ITU G652.D or equivalent
	· Maximum Attenuation: 0.36 dB/km / 0.22 dB/km
	· Serial 1 gigabit Ethernet: 5000 m / - / -
	· Serial 10 gigabit Ethernet: 10000 m / - / 40000 m
	· Typical attenuation: 2.4 dB/km / 0.8 dB/km
	· Wavelengths: 1310 nm / 1383 nm / 1550 nm
· Standards in Compliance: TIA/EIA 492-CAAB IEC 60793-2-50 Type B1.3, ITU-T G.652 D, ISO/IEC 11801 Ed.2.2	

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### 6.19.3 Hybrid Copper-Fibre (Composite) Cable



Figure 3: Hybrid Copper-Fibre (Composite) Cable

Hybrid Copper-Fibre (Composite) Cable	
<b>General Specifications</b>	· Environment: <u>Indoor/Outdoor</u>
	· Cable Type: <u>Loose Tube</u>
	· Fibre Category: <u>SMF-28® Ultra fibre or equivalent</u>
	· Flame Rating: <u>Riser-CL3R</u>
<b>Standards</b>	· Application: <u>Duct, General Purpose Horizontal, Vertical Riser</u>
	· RoHS: <u>2011/65/EU</u>
	· Approvals: <u>National Electrical Code® (NEC) Article 800 or equivalent</u>
<b>Environmental Conditions</b>	· Test: <u>ICEA S-120-742, UL 13, 300 VAC, 80 C, ICEA S-83-596</u>
	· Temperature Range, Installation: <u>0 °C to 60 °C (32 °F to 140 °F)</u>
	· Temperature Range, Operation: <u>-40 °C to 70 °C (-40 °F to 158 °F)</u>
<b>Cable Design</b>	· Temperature Range, Storage: <u>-40 °C to 70 °C (-40 °F to 158 °F)</u>
	· Central Element: <u>Yarn</u>
	· Number of Ripcords: <u>1</u>
	· Outer Jacket Color: <u>Black</u>
	· Outer Jacket Material: <u>Flame-retardant</u>
	· Buffer Tube Diameter: <u>3 mm (0.12 in)</u>
	· Conductor: <u>12 to 16 AWG</u>
<b>Mechanical Specifications</b>	· Number of Conductors: <u>2</u>
	· Color Code Standards: <u>Telcordia</u>
	· Max. Tensile Strength, Long-Term: <u>267 N (60.02 lbf)</u>
	· Min. Bend Radius Installation: <u>133 mm (5.24 in)</u>
<b>Optical Characteristics</b>	· Min. Bend Radius Operation: <u>88.9 mm (3.5 in)</u>
	· Nominal Outer Diameter: <u>9 mm (0.35 in)</u>
	· Fibre Name: <u>SMF-28® Ultra fibre</u>
	· Maximum Attenuation: <u>0.4 dB/km / 0.4 dB/km / 0.3 dB/km</u>
	· Wavelengths: <u>1310 nm / 1383 nm / 1550 nm</u>
	· Fibre Category: <u>ITU-T G.657.A1</u>

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### 6.19.4 Fibre Patch Panel (ODF)

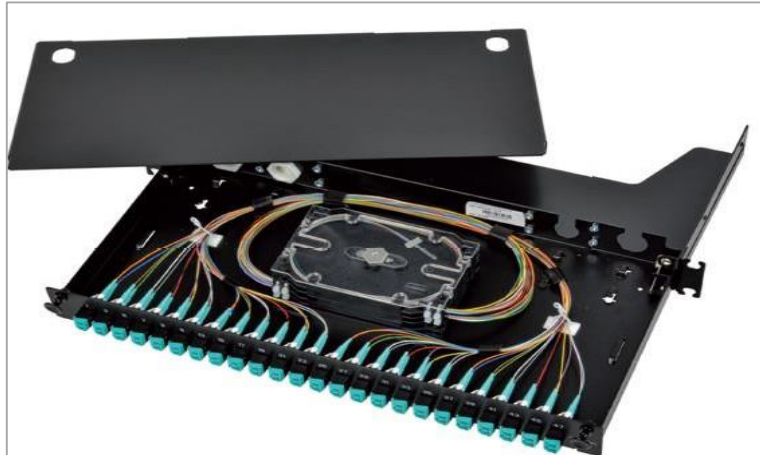


Figure 3: Fibre Patch Panel

<b>Easy Working</b>	· No tools needed
	· Remove top cover
<b>Housing</b>	· Lightweight, but robust
<b>Quick-mount</b>	· Allows single-person mounting of housing
<b>Splice capacity</b>	· Segmentation of fusion splices with splice packs of 12 fibres each or cassettes with 24 fibres each
	· up to 96 fibres in 1U
<b>Adapters</b>	· Minimal insertion loss and clean connectors
	· Ceramic inserts and LC duplex with shutters
<b>Labelling Options</b>	· Port numbering above and below adapter modules
<b>Cable entry Type</b>	· Prepunched circular
<b>Pigtail</b>	· 900 $\mu\text{m}$ TB(Easy Strip) stripped to 250 $\mu\text{m}$
	· 2 m long, 0.8 m 900 $\mu\text{m}$ and 1.2 m 250 $\mu\text{m}$
	· Telcordia colour
<b>Access Type</b>	· Front, top, rear
<b>Mounting Type</b>	· Rack 19-in

### 6.19.5 DC Power Supply



Figure 4: DC Power Supply

<b>Compact and scalable</b>	· 9-in, 1U rack-mount shelf supports up to six hot-swappable power modules
<b>Support for third-party devices</b>	· Supports powering of specified network interface devices (NIDs)
<b>Universal AC input</b>	· 85 to 265 VAC single input
<b>DC output capacity</b>	· 12 outputs of 57 VDC, 1200 W total max output capacity (100 W per output)
<b>Protection</b>	· High input voltage fuse protection.
	· Low input voltage disconnect
	· Overcurrent protection – continuous, hiccup mode, auto recovery
	· Reverse polarity protection
<b>Mixed mode support</b>	· 12 output inrush current circuits for support for different types of optical network evolution (ONE) solutions remote units, as well as specified NIDs (see supported NIDs in specifications).
<b>Integral fan cooling</b>	· Each power supply module includes an integrated fan module
	· Fan activation in extreme temperatures only
<b>AC Input</b>	
<b>Voltage Range</b>	· 85 to 265 VAC; 47-63 Hz via IEC socket Rated voltage (for safety approval): 100-240 VAC, 50-60 Hz
<b>Current</b>	· Maximum input current at 85 VAC is 16.8 amp for six PSMs
<b>Power Factor</b>	· > 0.925 at maximum load
<b>Efficiency</b>	· For 100 VAC input voltage: > 86% minimum at 25°C and 85% minimum at 55°C For 100 VAC input voltage: > 88% minimum at 25°C and 86% minimum at 55°C
<b>DC Output per Port</b>	
<b>Voltage</b>	· 57 V constant output power
<b>Maximum Current</b>	· 1.7 amp
<b>Power</b>	· 100 W
<b>Power</b>	
<b>Maximum System Output Power</b>	· 1200 W @ 57 VDC
<b>Polarity</b>	· Isolated; 57 V
<b>Individual Module Power</b>	· 200 W
<b>Noise</b>	· Ripple < 100 Hz at max load @ 20 MHz BW
<b>Monitoring</b>	· Status LED per PSM and per output
<b>Identified Faults</b>	· Low input voltage
	· Fan failure detection
	· Output voltage out of range
	· Internal fault

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Protection	
<b>Output Current Limit</b>	<ul style="list-style-type: none"> <li>· Output current limit &gt; 94 W and &lt; 100 W</li> <li>· Auto-recovery when current is back within range</li> </ul>
<b>Output Inrush</b>	· Current limiter supports startup with 500uF ± 20% load capacitance and 200 mA load
<b>Over Voltage</b>	· Limit of 61 V ± 4%.
<b>Input Protection</b>	· Auto shutdown and auto restart when correct voltage is restored
<b>Input Fuses</b>	· Short circuit on main lines is protected by replaceable fuse
Physical	
<b>Connectors</b>	<ul style="list-style-type: none"> <li>· Input connector: TU-320-B-MB TECX or equivalent</li> <li>· Output connector: PCIC16W7M400A1/AA POSITRONIC part number or equivalent</li> </ul>
<b>Mounting</b>	<ul style="list-style-type: none"> <li>· 19-in rack-mount (1U)</li> <li>· Wall-mount</li> </ul>

### 6.19.6 Media Converter



Figure 5: Media Converter

Media Converter	
<b>Physical Port</b>	<ul style="list-style-type: none"> <li>· port 10G/5G/2.5G/1G/100M Base-T RJ45 interface with IEEE 802.3bt PoE++ injector function</li> <li>· 1 port 10GBase-X SFP+ interface</li> </ul>
<b>Power over Ethernet</b>	<ul style="list-style-type: none"> <li>· Complies with IEEE 802.3bt PoE++ Type-4 PSE</li> <li>· Backward compatible with IEEE 802.3af/at PoE+ standard</li> <li>· Supports PoE Power up to 90 watts for PoE port</li> <li>· Provides DC 55V power over RJ45 Ethernet cable to PD with Ethernet port</li> <li>· Auto-detect IEEE 802.3bt equipment and incorrect installation damage protection</li> <li>· Remote powering of connected PD up to 100m</li> </ul>
<b>Layer 2 Features</b>	<ul style="list-style-type: none"> <li>· IEEE 802.3an/802.3ae Ethernet standard compliant</li> <li>· Supports auto-negotiation and 10Gbps full duplex mode</li> <li>· Prevents packet loss with IEEE 802.3x pause frame flow control (full-duplex)</li> <li>· Automatic address learning and address aging</li> </ul>

<b>Industrial Case and Installation</b>	· Slim-type IP30 metal case
	· DIN rail and wall-mount design
	· 44~57V DC redundant power with reverse polarity protection
	· 100 meters over Cat6A at 10Gbps
	· Plug and Play Installation
<b>Hardware Specifications</b>	
<b>Copper Interface</b>	· 1 x 10G/5G/2.5G/1G/100M Base-T RJ45, Auto-MDI/MDI-X, auto-negotiation
<b>Fibre Optical Interface</b>	· 1 x 10GBase-SR/LR SFP+ interface
<b>Connector</b>	· Removable 6-pin terminal block
	· Pin 1/2 for Power 1, Pin 3/4 for fault alarm, Pin5/6 for Power 2
<b>Alarm</b>	· Provides one relay output for power failure
<b>LED</b>	· PWR, SYS, Fault Alarm, PoE++ Usage, 10G RJ45 port LNK/ACT
	· 10G SFP+ port LNK/ACT
<b>Enclosure</b>	· IP30 type metal case
<b>Installation</b>	· DIN-rail and wall mount
<b>Dimensions</b>	· 3.03 x 1.48 x 4.21 in (77 x 37.5 x 107mm) (W x D x H)
<b>Weight</b>	· 270g
<b>Power Requirements</b>	· 44~57V DC, supports reverse polarity protection
<b>Power Consumption</b>	· System ON without loading: 48V DC: 4.36W
	· Full loading with PoE++: 48V DC: 98W
<b>Specifications</b>	
<b>Flow Control</b>	· IEEE 802.3x pause frame for full duplex
<b>Fabric</b>	· 20Gbps
<b>Network Cables</b>	· 10G/5G/2.5G/1G/100M Base-T:
	· 10G - Cat 6A/7
	· 5G - Cat 6/6A/7
	· 2.5G/1G - Cat 5e/6/6A/7
	· 100M – Cat 5/5e/6/6A/7
	· Cat 5/5e/6/6A/7 UTP cable (max 100 meters) EIA/TIA-568 100-ohm STP (max 100 meters) 10GBase-LR/SR/BX:
	· 50/125um or 62.5/125um multi-mode fibre optic cable, up to 300m
· 9/125um single-mode fibre optic cable, up to 80km	
<b>Power over Ethernet</b>	
<b>PoE Standard</b>	· IEEE 802.3bt Power over Ethernet Plus Plus (HPoE)
<b>PoE Power Output</b>	· 90W
<b>PoE Power Supply</b>	· End-span + Mid-span
<b>Power Pin Assignment</b>	· Mode A End-span: 1/2(-), 3/6(+)
	· Mode B Mid-span: 4/5(+), 7/8(-)
<b>PoE Power Budget</b>	· 90 watts@44~57V DC input

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<b>Standards Conformance</b>	
IEEE Standards	· IEEE 802.3u 100Base-T
	· IEEE 802.3ab 1000Base-T
	· IEEE 802.3bz 2.5G/5GBase-T
	· IEEE 802.3an 10GBase-T
	· IEEE 802.3ae 10Gbps Ethernet
	· IEEE 802.3af Power over Ethernet
Regulatory Compliance	· FCC Part 15 Class A
<b>Environment</b>	
<b>Temperature</b>	· Operating: -40°C ~ 65°C   -40°F ~ 149°F
	· Storage: -40°C ~ 85°C   -40°F ~ 185°F
<b>Humidity</b>	· Operating: 5% ~ 95% RH Non-condensing

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## 7. Bidder Qualification Criteria

S. No.	Mandatory Eligibility Criteria	Remarks Yes / No
1.	At least three (03) similar completed / in hands projects in the last three years. Testimonial from the customer or can be confirmed by IBA, Karachi, through the contact detail provided.	
2.	Last 3 years' turnovers of a minimum of 20 million (per year) as per Annual Return and Audited Financial Statement.	
3.	Sales tax, SRB and NTN registration certificates with last month's Tax return copy of FBR and SRB at the time of submission of bid.	
4.	Authorized Partner/Manufacturer Certificate.	
5.	Principal presence in Pakistan for at least 5 years.	

**Note: Must provide supporting documentation for evaluation.**

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## 8. Bill of Quantity:

Provide, Supply and Commission Optical Fibre Cable and Passive Work

Location: Cricket & Football Grounds

Sr #	Description & Features	Quoted Brand	Quoted Model	Qty	Unit Price	Total Amount
1.	<b>Power Supply Chassis</b> 1U + 4 PS modules			1 unit		
2.	<b>Power Cable</b> 1 Pair (1:1)			8 units		
3.	<b>Distributed Antenna System (DAS)</b> COMP 2 ULTRA 2X16AWG Class 300 02ZDF-21W01M20			1500 meters		
4.	<b>Distributed Antenna System (DAS)</b> COMP 2 ULTRA 2X12AWG CLASS 300 02ZDF-21W01M20			500 meters		
5.	<b>Closet Connector Housing</b> 2U (F/4 PANELS)			1 unit		
6.	<b>Closet Connector Housing Splice Cassette</b> 12F, LC-D, OS2, Shutter, 250UM			2 units		
7.	<b>Keystone CCH Panel</b>			2 units		
8.	<b>Power Keystone Adapter</b> (Connector Style)			8 units		
9.	<b>SC to LC SM Patch cord</b> , 1 meter			32 units		
10.	<b>Perforated Network Rack</b> 12U Wall Mount with Colling Fan			1 unit		
11.	<b>Pole Box</b> Size 18 x 18 x 6 IP66 Metal with floor stand in all respects			8 units		
12.	<b>Patch Cord</b> Cat 6 U/FTP, Size: 7.5 meter			8 units		
13.	<b>Patch Cord</b> Cat 6 UTP, Size: 1 meter			8 units		
14.	<b>Port</b> 10GBASE-LR SFP+ 1310nm 10km DOM Xver Mod			8 units		
15.	<b>UPVC Pipe</b> Size 1" with fitting accessories			330 feet		
16.	<b>G.I. Flexible Pipe</b> 1" with fitting accessories			50 meters		
17.	<b>Accessories for Fibre Optic Cable related items</b> like Steel clamp, Pole Box fitting Screws, Washer, RJ45 Connectors Box 02, UPVC Joints, UPVC Elbow, saddle, Casio EZ-Label Printer Tape, Ties etc.			1 unit		

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18.	<b>Laying and Installation Charges</b> of 2000 meters Fibre Optic Cable, with all accessories such as Cat6, PVC conduit, metal boxes, rack harnessing, and end-to-end ribbon tagging it is mandatory to place them on the nearest conduits cables and enclosures	1 unit		
19.	<b>Civil Work</b> including Digging Charges, cement filling, and Pavers refixing in all respects.	1 unit		
20.	<b>Installation Charges</b> of Outdoor access point brackets, making a ¾” hole on the 8 poles, and mounting the electrical enclosure will involve electric and gas welding.	1 unit		
21.	<b>Fibre Optic Cable Fusion Splicing, Cassette ODFs and BPEO Enclosures Installation</b> with all respects	64 units		

**Single Mode FOC**

Sr #	Description & Features	Quoted Brand	Quoted Model	Qty	Unit Price	Total Amount
22.	<b>6 Core SM Outdoor Steel Armor</b> SST Central Tube Cable E9 SMF-28e+, ITU G6, Part # 006EEC-13122A20			470 meters		
23.	<b>12 Core SM Outdoor Steel Armor</b> SST Central Tube Cable E9 SMF-28e+, ITU Part # 012EEC-13122A20			2450 meters		
24.	<b>24 Core SM Outdoor Steel Armor</b> SST Central Tube Steel Armour Outdoor Cable, Part# 024EEC-13122A20			900 meters		
25.	<b>48 Core SM ALTOS Loose Tube Steel Armor</b> Outdoor Cable Part # 048ERC-T3122A20			1200 meters		
26.	<b>Fibre Patch Cord</b> SM LC to LC 3m UPC Dup Part # F040402G2Z20003M			78 units		
27.	<b>Fibre Patch Panel</b> SM OS2 LC 08 Core (Including Coupler, Pigtails And Splice) - Loaded- Part # LAN1-08AE-PGTL-B			3 units		
28.	<b>Fibre Patch Panel</b> SM OS2 LC 12 Core (Including Coupler, Pigtails And Slice) - Loaded – Part # LAN1-12AE-PGTL-B			11 units		

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29.	<b>Fibre Patch Panel SM OS2 LC 24 Core</b> (Including Coupler, Pigtails And Splice Part # LAN1-24AE-PGTL-B			3 units		
30.	<b>Fibre Patch Panel SM OS2 LC 48 Core</b> (Including Coupler, Pigtails And Splice Part # LAN1-48AE-PGTL-B			3 units		
31.	<b>Cable Management Panel Front 19" 1U</b> Plastic Body Part # XE005315637			19 units		
32.	<b>Cable Laying Charges</b>			1 job		
33.	<b>OTDR Testing</b>			262 unit		
34.	<b>Fusion Splicing Charges</b>			524 unit		

**Multi-Mode FOC**

Sr #	Description & Features	Quoted Brand	Quoted Model	Qty	Unit Price	Total Amount
35.	<b>6 Core MM OM3 Central Tube Steel Armour</b> Part # 006TEY-13188H2G			580 meters		
36.	<b>12 Core MM OM3 Indoor/Outdoor Steel Armor</b> Central Tube Cable 12F G50 MMF Part# 012TEY-13188A2G			150 meters		
37.	<b>Fibre Patch Cord MM OM4 LC to LC 10m</b> Part# F050502Q2Z20010M			5 units		
38.	<b>Fibre Patch Panel MM OM3/OM4 LC 06 Core</b> (Including Coupler, Pigtails And Splice) -Loaded Part# LAN1-06AD-PGTL-B			3 units		
39.	<b>Cable Management Panel Front 19" 1U</b> Plastic Body Part# XE005315637			7 units		
40.	<b>Fibre Patch Cord MM OM4 LC to LC 1m</b> PC Duplex Part# F050502Q5Z20001M			21 meters		
41.	<b>Fibre Patch Cord MM OM4 LC to LC 3M</b> UPC Duplex Part# F050502Q2Z20003M			25 meters		
42.	<b>Fibre Patch Cord MM OM4 LC to LC 5m</b> Part# F050502Q2Z20005M			5 meters		
43.	<b>Cable Laying Charges</b>			1 unit		
44.	<b>OTDR Testing</b>			90 units		
45.	<b>Fusion Splicing Charges</b>			180 units		

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 Stamp and Signature

**Location: Aman CED Building**

Sr #	Description & Features	Quoted Brand	Quoted Model	Qty	Unit Price	Total Amount
46.	<b>6 Core SM Outdoor Steel Armor SST</b> Central Tube Cable E9 SMF-28e <sup>+</sup> , ITU G6 Part# 006EEC-13122A20			1060 meters		
47.	<b>Fibre Patch Cord</b> SM LC to LC 3m UPC Dup Part# F040402G2Z20003M			16 units		
48.	<b>Fibre Patch Panel</b> SM OS2 LC 06 Core (Including Coupler, Pigtails And Splice) Loaded Part# LAN1-06AE-PGTL-B			5 units		
49.	<b>Fibre Patch Panel</b> SM OS2 LC 12 Core (Including Coupler, Pigtails And Slice) Part# LAN1-12AE-PGTL-B			1 unit		
50.	<b>Cable Management Panel Front</b> 19" 1U Plastic Body Part# XE005315637			6 units		
51.	<b>Cable Laying Charges</b>			1 unit		
52.	<b>OTDR Testing</b>			42 units		
53.	<b>Fusion Splicing Charges</b>			84 units		

<b>Total Amount in PKR</b>	
<b>13% SST (if applicable)</b>	
<b>18% GST (if applicable)</b>	
<b>Grand Total Amount in PKR</b>	

**Total Amount Rupees (in words)** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
Stamp and Signature

\_\_\_\_\_

It is hereby certified that the terms and conditions have been read, agreed upon and signed.

M/s \_\_\_\_\_

Contact Person \_\_\_\_\_

Address \_\_\_\_\_

Tel # \_\_\_\_\_ Fax \_\_\_\_\_

Mobile \_\_\_\_\_ Email \_\_\_\_\_

\_\_\_\_\_  
Stamp and Signature

## 9. General Conditions of Contract

THIS AGREEMENT is executed at KARACHI, on this day \_\_\_\_\_, 2023.

### BETWEEN

**M/s. Institute of Business Administration, Karachi** through its **Registrar**, located at Main Campus, University Enclave, Karachi, hereinafter called and referred to as "IBA" (which expression shall wherever the context so permits, be deemed to include its legal representatives, executors, successors and assigns) of the FIRST PART.

### AND

**M/s. \_\_\_\_\_**, having its office at \_\_\_\_\_, hereinafter referred to as "THE SUPPLIER" (which expression shall wherever the context so permits be deemed to include its legal representatives, executors, successor and assign), through its proprietor **Mr \_\_\_\_\_**, holding CNIC No. \_\_\_\_\_ on the SECOND PART.

**WHEREAS** "IBA" intends to obtain a Provide, Supply and Commission Optical Fibre Cable and Passive Work vide tender # IT/34/23-24 (IBA requirement) up to the satisfaction and handing over the material(s) to the "IBA" having accepted the offer in a finished form complete in all respect.

**NOW IT IS HEREBY AGREED AND DECLARED BY AND BETWEEN THE PARTIES AS FOLLOWS:**

### WITNESSETH

"IBA" hereby offer to appoint "THE SUPPLIER" as their supplier for the specific purpose of "Provide, Supply and Commission Optical Fibre Cable and Passive Work ". "THE SUPPLIER" hereby agree to the offer of the "IBA" in acceptance of the terms and conditions herein below forth.

### Article I:

#### **DUTIES and SCOPE OF SUPPLY and SERVICES AND AGREEMENT**

- 1.1 This Agreement includes, the "Supply and Commissioning of Optical Fiber Cable and Passive Work", discussions with "IBA" before the determination of scope of supply with any/all other relevant details to "IBA".
- 1.2 "THE SUPPLIER" agrees to provide any/all kind of Supply and Commissioning of Optical Fiber Cable and Passive Work to "IBA" whenever and wherever form is required as per the terms & conditions of this Agreement or standard bidding document.
- 1.3 "THE SUPPLIER" will coordinate their work with Manager IT of the "IBA" who will assist "THE SUPPLIER" in supervision of proposed Supply and Commissioning of Optical Fiber Cable and Passive Work.
- 1.4 "THE SUPPLIER" will visit the Purchase Offices located at Main Campus, University Enclave, Karachi as & when required with prior appointment.
- 1.5 Life Insurance / Security of worker will be the responsibility of supplier. IBA will not be responsible for any mishap.
- 1.6 All staff must have CNIC and clearly mentioned to discourage work through child labor.

1.7 All logistic charges will be borne by "THE SUPPLIER".

## **Article II**

### **SCOPE OF PROFESSIONAL SUPPLIES**

- 2.1 "THE SUPPLIER" hereby agree and acknowledge to Supply and Commissioning of Optical Fiber Cable and Passive Work in accordance with the Description & Specification.
- 2.2 "THE SUPPLIER hereby agree and acknowledge the acceptance of attending the meetings with the Head of Procurement "IBA" as & when required.
- 2.3 Delivery on or before XXXX XX, 2024.
- 2.4 All staff must have CNIC and clearly mentioned to discourage work through child labor.
- 2.5 "THE SUPPLIER", will provide all required/necessary labor(s) / transportation(s) / cartage(s) what so ever required to complete the procurement at the cost/charges amount offered in the tender vide # IT/XX/23-24.

## **Article III WARRANTY**

- 3.1 Comprehensive onsite OEM warranty.

## **Article IV REMUNERATION**

- 4.1 The cost offered by the SUPPLIER is Rs. \_\_\_\_\_ (inclusive of all taxes) Supply of Optical Fibre Cable and Passive Work vide tender # IT/34/23-24 variation may occur. The cost is inclusive of labor /transportation/supplies/taxes/levies/customs duties etc.
- 4.2 Liquidity damages a the rate of 2% per month, of the total agreed on payment as per the Work Order, of the total cost, will be imposed in case of delayed delivery services. Services will be deemed completed in finished form as per specification and "THE SUPPLIER" have to deliver the required number of Supply of Optical Fibre Cable and Passive Work to IBA.
- 4.3 Performance Security 5% of the total amount of the Work Order will be provided by "THE SUPPLIER".
- 4.4 Stamp Duty @ 0.35% of the cost of the Purchase Order will be deposited in the Government treasury by the SUPPLIER. This paid Stamp Duty challan would be submitted along with the Bill / Invoice.
- 4.5 Tax(es)/Challan(s)/Levy(ies)/Custom Duties etc, if any or additional will be paid/borne by THE SUPPLIER as per SRO/Notification.
- 4.6 Payment will be made within 30 working days after complete delivery as per BoQ and submission of Invoices.

## **Article V ARBITRATION**

- 5.1 In case of any dispute, difference or any question which may at any time arise between the parties hereto or any person under them, arising out in respect of this letter of intent or this subject matter hereof shall be referred to the Registrar of the IBA for arbitration/settling of the dispute, failing which the decision of the court law in the jurisdiction of Karachi binding to the parties. The Arbitration proceedings will be governed by the Arbitration Act, of 1940 and the Substantive and procedural law of Pakistan. The venue shall be Karachi.

**Article VI**  
**TERMINATION**

- 6.1 "IBA" may terminate this agreement if the job is not executed according to the requirement at any time after issuing a 15-day notice.

**Article VII**  
**INDEMNITY**

- 7.1 "THE SUPPLIER" in its individual capacity shall indemnify and keep IBA and any person claiming through IBA fully indemnified and harmless from and against all damages, costs and expenses caused to or incurred by "THE SUPPLIER", as a result of any defect in the title of IBA or any fault, neglect or omission by the "THE SUPPLIER" which disturbs or damage the reputation, quality or the standard of services provided by "IBA" and any person claiming through the IBA.

**Article VIII**  
**NOTICE**

- 8.1 Any notice given under this AGREEMENT shall be sufficient if it is in writing and if sent by courier or registered mail.

**Article IX:**  
**SEVERABILITY**

- 9.1 If any terms covenant or condition of this agreement shall be deemed invalid or unenforceable in a court of law or equity, the remainder of this agreement shall be valid and enforced to the fullest extent permitted by prevailing law.

**Article X**  
**INTEGRITY PACT**

- 10.1 The intention not to obtain the procurement/work of any Contract, right, interest, privilege, or other obligation or benefit from the IBA or any administrative or financial offices thereof or any other department under the control of the IBA through any corrupt practice(s).
- 10.2 Without limiting the generality of the forgoing the M/s. \_\_\_\_\_ represents and warrants that it has fully declared the charges, fees, commission, taxes, levies etc, paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within the IBA directly or indirectly through any means any commission, gratification, bribe, gifts, kickback whether described as consultation fee or otherwise, with the object of obtaining or including the procurement or service contract or order or other obligations whatsoever from the IBA, except that which has been expressly declared pursuant hereto.
- 10.3 M/s. \_\_\_\_\_ accepts full responsibility and strict liability for making any false declaration/statement, not making full disclosure, misrepresenting facts or taking any action likely to degrade the purpose of declaration, representation and warranty. It agrees that any contract/order obtained aforesaid shall without prejudice to any other right and remedies available to the IBA under any law, contract, or other instruments, stand void at the discretion of the IBA.

10.4 Notwithstanding any right and remedies exercised by the IBA in this regard, M/s. \_\_\_\_\_ agrees to indemnify the IBA for any loss or damage incurred by it on account of its corrupt business practice and further pay compensation to the IBA in any amount equivalent to the loss of any commission, gratification, bribe, gifts, kickback given by the M/s. \_\_\_\_\_, as aforesaid for the purpose of obtaining or inducing procurement/work/service or other obligation or benefit in whatsoever from the IBA.

**Article XI**

**MISCELLANEOUS**

11.1 The terms and conditions of the AGREEMENT have been read over to the parties which they admit to be correct and abide by the same.

11.2 The validity of the contract will be effective from the date of issue of the Purchase Order.

11.3 All terms and conditions of tender vide # IT/34/23-24 will be an integral part of this agreement.

IN WITNESS WHEREOF both the parties hereto have set and subscribed their respective hands to this agreement at Karachi on the date mentioned above.