Telephone Shilpa Sangstha Limited

Tongi, Gazipur

(A State Own Public Limited Company)

BIDDING DOCUMENT

FOR

"Supply, Installation, Testing and Commissioning of OLT & ONU in SKD condition on Turn-key Basis"

Book - 2 (Two)

TECHNICAL SPECIFICATION

TENDER NO. TSS/FP/OLT&ONU/2010/01

DATED : 24/03/2010

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TENDER DOCUMENT FOR MULTI SERVICE ACCESS NETWORK THROUGH OPTICAL FIBER CABLE

BOOK TWO

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Book Two

Chapter 1

SPECIAL INFORMATION AND INSTRUCTION TO BIDDERS

1.1. The bid shall be of "one Envelop" system as per "The Public Procurement Regulation 2006".

1.2. The submitted Envelop containing the bid shall have "three parts" in three separate folder. The first part is **Mandatory Documents**, the second is **Detail Technical Documents and the third is Financial Documents. Any disagreement shall result in rejection of the bid and shall not be considered for evaluation by TEC**.

1.3. The Bidders "Mandatory Documents" folder shall contain the following documents in each set and a total of four (4) sets (one original, 3 photocopy) shall be submitted.

1.3.1. Tender Document Purchase Receipt (original in one set and copies in other sets)

1.3.2. Forwarding of the Bid (as per "**Annex A**" attached in Book 1, duly filled up and properly *signed.)*

1.3.3. Bid Security / Bank Guarantee (as per "**Annex B**" attached in Book 1, duly filled up and *properly signed).*

1.3.4. The Bond for Spares (as per "**Annex D.1**." attached in Book 1, duly filled up and properly *signed).*

1.3.5. The **Bond for Expansion** (as per "**Annex D.2**." attached Book 1, duly filled up and properly *signed).*

1.3.6. The **list of attached certificates** (as per "**Annex F**" attached in Book 1, duly filled up and *properly signed).*

1.3.7. A "Declaration on Observance of Ethics" (as per "**Annex G**" attached in Book 1, duly filled up *and properly signed).*

1.3.8. A "Declaration of Joint Liability" (as per "**Annex H**" attached in Book 1, duly filled up and *properly signed) [applicable only if the bid is submitted by a Joint Venture Company/Consortium]*

1.3.9. The Annex 1.1. to 1.4., attached in Book Two, duly filled up .

1.3.10. Bid Summary (as per format shown in "**Form F**" attached in Book Two, duly filled up).

1.3.11. Principal's Letter of Authority (if the bid is submitted by an entity other than principal).

1.3.12. The letter of authority of the manufacturer of Multi Service Access Network (Optical Line Termination -OLT & Optical Network Unit-ONU)to participate in this bid (if the bidder is not manufacturer of the equipment under the bid and for applicable equipment only).

1.3.13. Guarantee certificates from the manufacturer (On Manufacturer's letterhead) regarding continuous supply of spare parts of OLT /ONU for 7 (Seven) years from the date of issuance of FAC.

1.4 The second part titled "Detail Technical Documents" shall contain

1.4.1 Documentary Evidences to Establish Equipment's Performance

1.4.1.1 Certificates in support of successful running of commercial Multi Service Access network containing the offered brand OLT & ONU in at least 4 (Four) countries. In each country, the deployed network must have at least 30,000 subscriber lines (Telephone, ADSL, FE) after 2003. The certificates must be from the national telecom/network operator.

1.4.1.2 If any bidder fails to submit certificate(s) required as per Clause-1.4.1.1, the bid shall be treated as "**Substantially Non-responsive**" and shall not be taken for further evaluation.

1.4.2 Documentary Evidence Establishing Bidder's Experience

1.4.2.1 The bidder must provide a certificate from the relevant telecom authority which should state that he has successfully installed and commissioned at least one telecom project on turn-key basis outside its country of origin. Failure to provide such certificate shall be treated as "material deviation".

1.4.2.2 If the bidder has completed or is working to complete telecom project(s) in Bangladesh within last 5(five) years, the bidder must submit a statement mentioning the name of the project(s) with at least (but not limited to) the following information for the purpose of post qualification;

i) Effective date of contract
ii) Project completion period as per contract
iii) Status of the project (whether completed or running)
a) If completed, when.
b) If running project, then approximate percentage of works completed and expected date of completion.
iv) Other related information if any

If any bidder fails to give such statement, the bid shall be treated as "**Substantially Non-responsive**" and shall not be taken for further evaluation.

1.4.3 The following documents; one soft copy provided in CD (in MS office & PDF format) and 4 (four) hard copies, of which at least two copies shall be in original.

1.4.3.1 Brochure/ Catalog of the Manufacturer, showing model name, country of origin description and capacities etc., for OLT, ONU, and NMS. Downloaded documents from web site (address must be given) shall be acceptable provided that the documents contain the required information.

1.4.3.2 Explanation of Redundancy (whether 1 + 1 or N + 1) of various core elements such as control processors, back-plane, storage devices, power supply etc.

1.4.3.3 A "**Clause by Clause Compliance Schedule**" to all the clauses and sub-clauses of the Tender Document. The schedule shall prepare as per format shown in Book 1 (Annex C) of tender document.

1.4.3.4 The Tender document duly signed (in original) and stamped in every page by an authorized representative of the bidder.

1.4.3.5 If the bid is through a local agent, then, Local Agent's Trade License (updated for current year).

1.4.3.6 Site-wise break-down of the DC Power consumption (in Ampere) of all OLT at the present equipped capacity.

1.4.3.7 DC Power requirement (in Ampere) for all the ONU for present capacity along with capacity of proposed rectifier and battery .

1.4.3.8 Brochure/ Catalog of the Manufacturer, showing model name, country of origin description and capacities etc., for minor items namely Rectifier, Battery. Downloaded documents from web site (address must be given) shall be acceptable provided that the documents contain the required information.

1.5 If a bidder fails to give any document as per requirement stated in Clause 1.4.3.1 to 1.4.3.2 above, the submitted bid of the bidder shall be treated as "**Substantially Non-Responsive**".

1.6 Bidder who will not give any document as per requirement stated in Clause 1.4.3.3 to 1.4.3.5, the bid shall earn penalty point equivalent to a "**Material Deviation**" for each of such absent document.

1.7 Bidder who will not give any document as per requirement stated in Clause 1.4.3.6. to 1.4.3.8 above, the bid shall earn penalty point equivalent to a "**Major Deviation**" for each of such absent document.

1.8 The third part i.e. "Financial Documents" of the Bidder shall include the following filled up Forms attached with Book 2 :

1.8.1 Summary of the Bid Price as per "Form A."

1.8.2 Summary Prices for all equipments/items/services as per format shown in "Form B"s.

1.8.3 Detail BoQ for all equipments/items/services as per format shown in "Form C"s (up to the most detailed component/element level desired by the bidder).

1.8.4 Detail BoQ for Maintenance Spares for buffer stock, as per format shown in “Form D”.

1.8.5 Pricing Technique for Future Order, as per format shown in "Form E".

1.9 If for any bidder, its bid does not contain all required documents listed in 1.8.1. to 1.8.5 above, the bid shall be treated as “Substantially Non-Responsive”.

1.10 The documents listed in item 1.4 shall preferably be provided separately in separate Chapters of the technical document. But co-related items may be merged together or included in one single chapter. All the Chapters must be marked and numbered clearly and a list of contents must be provided on top of the technical document.

1.11 Regarding Documents/Certificates, the Bidder should note the following that:

1.11.1 The Documents/Certificates shall be in English or originally in any other language accompanied by “authorized translation in English”.

1.11.2 Authorized translation in English” shall mean a translated copy in English certified in original by the authorized official of the diplomatic mission representing Bangladesh in that certificate’s country of origin.

1.12 The bidder shall provide a list (as per Annex F attached in Book 1 and to be submitted with Mandatory Documents) of all the certificates. That list shall include detail name and address with telephone, email & fax numbers of the person signing each of those certificates (including persons signing the authorized translation in English - where applicable).

1.13 On the day of opening of the tender document, as prescribed by TSS, the bid shall be opened by the Tender Opening Committee in presence of the Bidders and/or their authorised representatives (if anybody likes to be present). After opening the bid, the presence of the necessary documents shall be checked, the total number of certificates, as listed in Annex F attached in Book 1.

1.14 Based on such examination, observations and information announced at the opening a “Tender Opening Sheet (TOS)” shall be prepared. Upon completion of opening of the tenders, all members of the Tender Opening Committee and the Tenderers or their representatives who attended the tender opening shall sign the TOS. Upon request copies can also be made available to the Tenderers.

1.15 On completion of the opening formalities, the tender opening committe shall forward that statement,along with 2(two) copies of Bid to the "**Tender Evaluation Committee**" of TSS.

1.16 The TEC shall follow the guidelines for Evaluation Criteria of Book 2 to evaluate the bids.

1.17 Eligibility of the Bidder

a) The bidder must be an International firm engaged in either or both of the following fields :

i) Manufacturing of Telecom and/or Data Network equipment; or

ii) Worldwide marketing, representation and/ or distribution of Telecom Equipment/Data Network

1.18 The bidder shall also submit necessary documents proving professional and technical qualifications and competence, financial resources, equipment and other physical facilities, including after-sales service where appropriate, managerial capability, experience in procuring object, reputation, and the personnel, to perform the contract. The documents will be used for "Post-qualification" purpose.

1.19 The bidder shall note that, during submission of the bid, if he does not comply and/or disagree to any or many specification, terms and/or conditions set forth in this document and/or proposes any alternate specification, terms and/or conditions; such non-compliance and/or disagreement and/or alternate specification, terms and/or conditions shall not be binding upon TSS until and unless such non-compliance and/or specification and/or terms and/or conditions have been accepted by TSS and has been incorporated in writing in the Purchase Contract and/or any other document which has been declared as part of the contract.

1.20 bidders/Manufacturers already Black Listed in TSS or BTCL.

Bid of any bidder who is already black listed in TSS or BTCL will be considered as "not eligible" and will not be considered for evaluation. If any bidder quotes any equipment from any manufacturer who is already Black Listed in TSS or BTCL, then the bid will be considered as "not eligible" and will not be considered for evaluation.

Book Two

Chapter 2

SCOPE OF WORKS

2.1 Deleted

2.2 For this purpose, this Tender proposes to procure the following system :

a) Optical Line Termination Equipment (OLT) having Present capacity requirement as shown in Annex 1.1
b) Optical Network Unit (ONU) of the Present capacity requirement as shown in Annex 1.2
c) Separate MDF & ODF at different sites as shown in Annex 1.3 & 1.4
d) Network Management System, Other equipment/materials/services.

2.3 Unless otherwise described in the Technical Specifications, the scope of provision shall cover , supplying, installing, testing, commissioning of equipment and material and its related facilities on "Turn-Key" basis.

2.4 Deleted

2.5 Detail Technical Specifications of various components of the required system/service are given in subsequent chapters of this document.

2.6 Maintenance Spares for buffer stock

2.6.1 The Bidder shall supply one separate list for essential "Maintenance Spares" to be maintained as a central buffer stock by TSS for emergency purposes.

2.6.2 That list must include at least two units of each replaceable item for all equipment covered by this purchase. Number of units may be more depending upon the size of the node and MTBF of

the critical equipments/components. But, for subscriber line cards (POTS, ADSL, FE card) the number will be at least ***10% (Ten percent)*** of the total number of line cards quoted in the offer for the entire network.

2.6.3 The quotation for such list (in Form D) is mandatory and failure to quote shall be regarded as "**non-compliance**" and it shall be considered that the bidder proposes to supply any quantity of spares, as fixed up by TSS during contract negotiation, "**free of charge**" to TSS.

2.7 Spare parts and consumables used before end of Guarantee Period

All necessary spare parts and consumables, used during installation, testing & commissioning and operation of the systems, **up to the end of Performance Guarantee Period**, shall be supplied by the Bidder at his own cost.

2.8 Spare Parts Guarantee

The Bidder shall provide a separate guarantee (as per format in Annex E.1.of Book 1) to the effect that, he shall guarantee the flow and availability of all spare parts, software and units without major design changes for at least 7(Seven) years from "the date of effect" of the Final Acceptance Certificate (FAC). If, within this period, there is any major design change or stoppage of production of supplied equipment, the bidder shall bear all the costs related to provision of alternate solutions.

If the bidder disagrees to the format of the guarantee, as shown in Annex E.1., the bid shall be considered having "**material deviation**"

2.9 Expansion Guarantee

The Bidder shall provide a separate guarantee (as per format in Annex E.2.of Book 1) to the effect that, he shall guarantee the flow and availability of all equipment, materials and services required for any subsequent expansion of its offered equipment for at least 7(Seven) years from "the date of effect" of the Final Acceptance Certificate (FAC). If, within this period, there is any major design change or stoppage of production, the bidder shall bear all the costs related to provision of alternate solutions.

If the bidder disagrees to the format of the guarantee, as shown in Annex E.2., the bid shall be considered having "**material deviation**"

2.10 Maintenance Support

2.10.1 Maintenance Support up to Performance Guarantee Period

i) The Bidder, at his own cost, shall engage at least 1 (one) Operation and Maintenance (O&M) Engineer. The Engineer shall be stationed in Dhaka to provide full maintenance support for all equipment covered by this purchase up to the end of the Performance Guarantee Period. This support service shall start from the date of cut-over of the first site covered by this purchase.

ii) The support Engineer will be fluent in English and will have enough knowledge of the relevant system to effectively solve all O&M problems; the person must also have at least 3(three) years of prior experience of providing such support in other countries. The bidder shall be responsible for all types of expenditure to be borne for the manpower, including all types of transportation.

iii) The maintenance support service shall cover at least (for 7 years along with) the following services and if the bidder disagree to this format of the services, the bid shall be considered having "material deviation".

.

c) helping maintenance personnel of to solve different software and hardware problems related to proper O&M of the equipment

d) identify and remove different bugs in the system's operational software

e) helping TSS or maintenance personnel to properly maintain relevant databases related to O&M of the system.

g) giving regular on-the-job training to maintenance personnel about different aspects of O&M

h) advising about different aspects of O&M, system dimensioning, expansion etc.

i) transfer of technology to TSS or its nominated organization.

2.11 Performance Guarantee Period

2.11.1 The bidder's offer shall include an overall "Performance Guarantee Period" for the whole equipment covered by this purchase. This period shall deem to have started from the cut-over of the first equipment into commercial service and last for 2(two) calendar years from "the date of effect" of the last PAC of the contract.

2.11.2 During the period of this Guarantee, the bidder shall offer all material, equipment, services and Maintenance support as described in relevant clauses for Spare Parts and "Maintenance Support up to Guarantee Period".

2.11.3 Bidders refusal to offering of the guarantee specified in this clause shall be treated as "Change of Substance".

2.12 Testing

2.12.1 Provisional Acceptance Test (PAT)

i) Before acceptance of the installed system/ equipment, TSS and BTCL representatives shall jointly carryout, on Dhaka site, detailed tests of all equipment to ascertain their inter-working ability with relevant equipment of the other manufacturers, working reliability, concurrence to agreed technical and other specifications, inventory checking of installed equipment etc. Such tests

shall be termed as “Provisional Acceptance Test (PAT)”. Prior to commencement of such tests, the contractor shall submit a proposed procedure for the PAT to be subsequently passed by TSS. The PAT will be done by a joint team of TSS & BTCL Engineers and bidder’s Engineers.

ii) On completion of installation and self-testing of any system/ equipment, the Bidder shall submit 3(three) copies of self-test results to TSS and offer that system/ equipment for Provisional Acceptance Test (PAT). TSS shall start along with BTCL such tests within one month after receipt the request. The bidder may, upon agreement by the both party, offer PAT for any part or parts of the total system. Such request for partial PAT may also be asked for by TSS.

iii) The bidder shall be totally responsible for arrangement of all equipment, fuel for generators, consumables, test gears and measuring equipment required for the PAT. All costs for materials and service shall be quoted and failure to quote shall be considered that the bidder proposes to provide this service totally " free of charge" to TSS.

iv) The bidder’s engineer shall be liable to make necessary arrangement complete any kinds of tests requested by PAT members during PAT procedure.

v) In addition, the bidder has to provide per-diem costs to PAT engineers as per following:

For whole System:

a.	Number of concerned officer/Engineer of PAT team	: 10 (Ten)
b.	Number of days allowed for per diem charge	: i. 15 (fifteen) working days per person for whole OLT/ONU sites (except NMS site). : ii. 4 (four) working days per person for NMS site **:** iii. 10 (ten) working days per person for whole OSP site.
c	Per diem charge to PAT members	:Taka 800/- per day per person
d	Other facilities	**:** Transportation

However, the bidder shall note that, if necessary, any or all PAT can continue for more than the above scheduled period; but, in such cases, the bidder shall not be liable to pay per-diem for those additional days.

2.12.2 Final Acceptance Test (FAT)

i) After completion of the PAT and cut-over of the system, the Engineers of the Bidder will take prompt necessary steps to remove all types of faults and replace all types of faulty equipment at the cost of the supplier. At the end of the “**Performance Guarantee Period for the Contract**”, the overall performance of all equipment will be reviewed and this review shall be termed as “ **Final Acceptance Test (FAT)**”.

ii) The review shall include (but not limited to) the required working reliability and performance standards of the equipment to meet tender specifications, the bidder's responsiveness to resolve all shortcomings mentioned in PAT reports and the bidder's removal of all pending & outstanding faults or shortages encountered during the Performance Guarantee Period for the Contract. When this FAT becomes due, the bidder shall make an Official request for starting of the FAT and TSS or BTCL official shall start the FAT within one month after receipt the request from the bidder.

iii) The bidder shall be responsible for arrangement of all equipment, consumables, test gears and measuring equipment required (if any) for such review tests. All costs for materials and service (if any) shall be quoted and failure to quote shall be considered that the bidder proposes to provide this service totally " free of charge" to TSS.

2.12.3 Customer Proof of Concept (CPOC)

i)As per government instruction PSI is not needed, accordingly testing at manufacturer's premises, to be termed as "Customer Proof of Concept (CPOC)", shall be carried out (on random sampling basis) for all equipment to be supplied under this purchase. The procedure for such CPOC shall have to be approved by TSS before such tests BTCL and TSS will jointly test the equipment to check their conformity with tender, contract and BoQ specifications.

ii) Bidder shall include in his offer unit price (per person basis) for this CPOC. Failure to quote shall be considered that the bidder proposes to provide this service totally " free of charge" to TSS. The details of test program shall be as follows. If the bidder does not agree to this basic minimum format, its disagreement shall be considered as a "major deviation".

a) Number of concerned officers	: 5 (Five)
b) Number of working days	: 7 (seven)
c) Per diem charge to concerned officers	: US$ 100 (One Hundread) per day (including holidays in between) per person
d) Other facilities	: Local
Transportation	Standard Accommodation
	Medical Services (if required)
	Bothway Air Ticket

2.13 Training

The Bidder shall provide the training to concern user BTCL & TSS Engineering personnel The curriculum shall be enough to facilitate transfer of technology for planning, designing, expanding and proper operation & maintenance of all the systems covered by this purchases to BTCL&TSS engineering personnel. Bidder shall include in his offer unit price (per person basis) for the Training . Failure to quote shall be considered that the bidder proposes to provide this service totally "free of charge" to TSS. If the bidder does not agree to this basic minimum format, its disagreement shall be considered as a "major deviation".

2.13.1Factory Training

Following generic areas should be included in the training program. Actual content of each item should, however, be customized to match with the architecture and solutions offered by the bidder.

This course module will cover at least the following broad topics:

Network Essentials and Technologies, Network Design, Hardware Description, Protocols and Interfaces, Signaling System, Network Management Systems and Tools etc.

The details of this course module is given below:

a) Number of concerned officer	: 10 (Ten)
b) Number of minimum working days	: 20 (twenty)
c) Per diem charge to concerned Trainee	: US$ 100 (Hundread) per day (including *all holidays in between and travel days) per person*
d) Other facilities	: Local
Transportation	Standard Accommodation Medical Services (if required) Both way Air Ticket

2.13.2Local Training

The Bidder shall provide practical Equipment based training in Bangladesh at TSS or BTCL Premises. The details of the local training shall be as follows:

For all equipment:

a) Number of concerned officers	: 25 (twenty five)
b) Number of minimum working days	: 20 (twenty)
c) Per diem charge to the Executives	: BD Taka 700(Seven hundred) per day per person for working days

2.14 Certificates to be Issued

2.14.1 Provisional Acceptance Certificate (PAC)

Upon successful completion of the PAT for any, many or all equipment covered by this purchase, the relevant authority of TSS, shall issue a "Provisional Acceptance Certificate" (PAC) for the equipment concerned. The exact breakdown of the purchase into various PAC components and the number of PACs to be issued shall be agreed upon between TSS and the bidder during contract negotiation.

2.14.2 Final Acceptance Certificate (FAC)

After completion of the FAT, if and only if, no outstanding issue has been detected, one “Final Acceptance Certificate” (FAC) covering the entire purchase contract shall be issued by the relevant authority of user or TSS .

2.14.3 Engineers’ Arrival Certificate (EAC)

During implementation period of the turn-key contract, the bidder shall provide various services. On arrival of bidder’s engineers for providing a component of such service and on receipt of written request from the bidder, the concern Office of shall issue “Engineers’ Arrival Certificate (EAC)” for each of such service components. The exact breakdown of the purchase into various EAC components and the number of EACs to be issued shall be agreed upon between TSS and the bidder during contract negotiation.

2.14.4 Successful Completion of Services’ Certificate (SCC)

During implementation period of the turn-key contract, the bidder shall provide various time-bound services like training, maintenance assistance service. On completion of such service components and on receipt of written request from the bidder, the relevant office of BTCL or TSS shall issue “Successful Completion of Services’ Certificate (SCC)” for each of such service components. The exact breakdown of the purchase into various SCC components and the number of SCCs to be issued shall be agreed upon between TSS and the bidder during contract negotiation.

2.14.5 Arrival of Goods and Materials Certificate

During implementation period of the turn-key contract, the bidder shall ship various consignments of foreign goods and materials and shall also supply items from local market. On arrival of such consignments to TSS sites or TSS stores (whichever is applicable) and on receipt of written request from the bidder, the relevant office of TSS shall issue “Arrival of Goods and Materials Certificate” for each of such consignments. The number of such consignments shall be decided by the bidder in accordance with its approved implementation plan.

2.14.6 Arrival of Engineers Certificate

During implementation period of the turn-key contract, the bidder shall provide services for CPOC to be attended by TSS or BTCL Engineers or jointly. On arrival of the Engineers in sites for those tests, the attending Engineers will sign an “Arrival of the Engineers Certificate”. The number of such certificates shall be decided by the bidder in accordance with its approved implementation plan.

2.14.7 CPOC Certificate

On successful completion of CPOC jointly by BTCL & TSS engineers, they will sign a "Customer’s of Proof Concept Test Certificate". The bidder, on its own initiative and cost, shall also conduct such tests for other consignments and shall issue relevant "Customers Proof of Concept Test

Certificate". The number of such certificates shall be decided by the bidder in accordance with its approved implementation plan.

2.14.8 Certificate for Clearance of Obligations

After the end of Performance Guarantee period, the Contractor shall give a written undertaking to the relevant Office of TSS to the effect that, in relation to the turn-key execution of the contract, it has no outstanding dues, liabilities and obligations towards any organization inside Bangladesh. After receipt of such undertaking and ascertaining the same by proper verification, the relevant office of TSS shall issue a "**Certificate for Clearance of Obligations**" to the contractor. Such a certificate shall be issued only and only if no such dues, liabilities and obligations are detected.

2.15 Inter-connections

i) The Bidder shall be responsible for making inter-connection facility (including supply of all required material, optical fiber cables, connectors at both ends of inter-connecting cable and related service) between its own system and existing system of BTCL. The Bidder shall also be responsible for connecting all the concerned equipment with IP backbone. All costs for materials and service shall be quoted by the bidder in his offer. Failure to quote shall be treated as "non compliance" and it shall be considered that the bidder proposes to provide this "free of charge" to TSS.

ii) Probable requirements of the connectors, optical fiber cables, cable tray etc. should be checked during the survey, before the submission of the bid, by the bidder.

2.16 Inter-works with the Existing Systems

The Bidder shall be responsible to ensure that all the system covered by this purchase shall be able to inter-work with all the existing systems of BTCL. The bidder shall make necessary survey and shall also be entirely responsible to solve any mismatch, if encountered. The Bidder shall quote any extra cost, if necessary, and if the bidder fails to quote for this work, he shall have to complete this work at his own cost. No subsequent additional request for costs for required interfaces, if any, shall be entertained.

2.17 Installation Material

i) The Bidder shall quote for all installation material for all of the equipment covered by this purchase. The Bidder, in his offer shall show, details of required installation material, for each equipment, per site, separately, to come to a total price for "Installation Material". The material shall include all type local material like fuel, power etc necessary to be used during installation and testing functions.
ii) These price breakdowns will be used for calculating revised total price if there is any subsequent change in number of sites/amount of equipment.

iii) If the bidder fails to give detail breakdown, TSS shall reserve the right to draw its own conclusions, as and where necessary.

iv) Failure to give detail breakdown shall also be treated as “minor deviation”.

v) All costs for materials shall be quoted and failure to quote shall be considered that the bidder proposes to provide these material totally " free of charge" to TSS.

2.18 Installation and Commissioning Services

i) The Bidder shall be responsible to provide all services related to installation, testing, commissioning and cut-over services for all equipment covered by this purchase. The Bidder, in his offer, shall show details of required installation and commissioning services, for each equipment separately, per site, to come to a total price for “Installation and Commissioning Services”.

ii) These price breakdowns will be used for calculating revised total price if there is any subsequent change in number of sites and/or amount of equipment.

iii) If the bidder fails to give detail breakdown, TSS shall reserve the right to draw its own conclusions, as and where necessary.

iv) Failure to give detail breakdown shall be treated as “minor deviation”.

v) All costs for service shall be quoted and failure to quote shall be considered that the bidder proposes to provide this service totally " free of charge" to TSS.

2.19 Deleted

2.20 Documentation

i) The Bidder shall supply at least (but not limited to) the following documents before PAT of each site.

a) Technical Documentation for all equipment of the Site- 1 set of hard copy and 1 set in CD; per site.
b) As-built installation drawings for all equipment : 1 set in CD and 1 set in hard copy; per site.
c) Station AC power wiring diagrams : 1 set in CD and 1 set in hard copy per site.

ii) Detail technical document for NMC: 1 set in CD and 1 set in hard copy.

iii) Bidder shall include in his offer prices for these Documentation. Failure to quote shall be treated as “non compliance” and it shall be considered that the bidder proposes to provide this "free of charge" to TSS.

2.21 Quotation for additional equipment

If the bidder thinks that any additional equipment, not listed in this document, is needed for proper implementation and subsequent O&M of the proposed equipment, and also any equipment mentioned in this document but not in the BoQ form, he shall quote for such equipment. If any such equipment are not quoted, it shall be deemed that no additional equipment are necessary for proper implementation and subsequent O&M of the proposed system. If during implementation and subsequent O&M upto guarantee period, either the bidder or the purchaser finds that any additional equipment are obligatory for proper implementation and subsequent O&M of the network, the bidder shall be liable to supply such systems or equipment, whatever be the required quantity, “free of charge” to TSS.

2.22 Unit Price for Future Orders

i) The unit prices for all future orders for all equipment and services covered by this purchase shall be equal to or below the prices quoted in the original contracted offer.

ii) The Bidder shall quote, with his offer, a detailed ‘Future Order Formula’ separately for equipment and services in Form E and submit in the Financial Documents.

iii) The new prices as per quoted future order formula shall become effective only for orders placed after Guarantee Period and up to the life time of all equipments, optical fibers and services as per BOQ under this purchase.

iv) All parameters of the quoted formulae must be described clearly**.**

Any disagreement/deviation/non-quotation will be treated as “**Change of substance**”.

2.23 Possibility of change in Scope of Work and BoQ

The Bidder shall consider that, the size, number, location & city of nodes and other equipment and subsequently the total BoQ may change, depending upon the actual requirement during BoQ preparation.

2.24 Omission of any Mandatory Items in the Contracted BoQ.

The bidder shall note that, even if any or many work(s), equipment or service(s) mentioned in this document as mandatory, is not mentioned in the contract BoQ for any reason, the bidder shall not be automatically relieved of his responsibility for those items. But if such omission(s) has (have) previously been agreed, in writing, by TSS, the bidder shall not be made liable for such omitted items. Such approved omissions, if any, shall have to be put either

into the contract document or into any other document which subsequently is declared as part of the contract.

2.25 Prevalence of different clauses, chapters and books

If, for any item, the contents of a Clause of any Book contradict with the contents of any other Clause of the same or other Book of the Tender Document, the prevalence of the Clause shall be as follows :

a) In all cases, regulations of Public Procurement Regulation 2006shall prevail over this Tender Document
b) In case of different Books, Book Two shall supersede Book 1;
c) In case of same Book, later page shall supersede previous page
d) In case of same page, later line will supersede previous age
e) In case of same Chapter, later Clause shall supersede previous Clause.

2.26 Deviations from requirements

The bidder shall note that, during submission of the bid, if he does not comply to any or many requirement and/ or specification and/ or terms or conditions set forth in this document or proposes any alternate specification and/ or terms and/ or conditions; such non-compliance and/ or alternate specification and/ or terms and/or conditions shall not be binding upon TSS until and unless such non-compliance and/or terms and/or conditions have been incorporated in writing in the Purchase Contract.

2.27 The Proposed Network Architecture

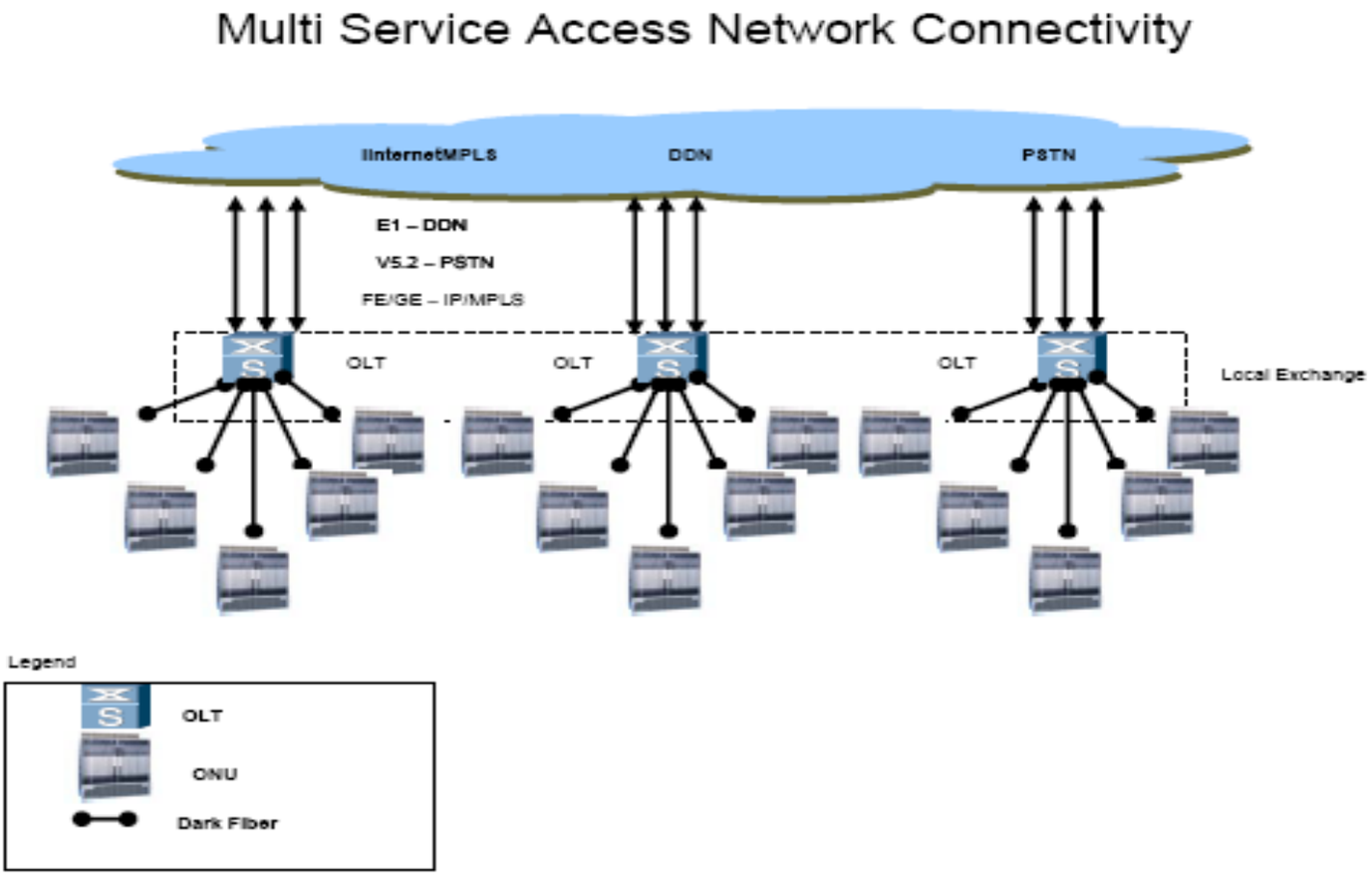
The diagram below shows a probable diagram of the network under this project. The OLT will be installed at Exchange premises providing gateway interface to PSTN, Internet/MPLS and DDN services. ONU shall be able to provide broadband access (ADSL, ADSL2+ and G.SHDSL), POTS services, lease-line based access, High Speed internet Service over Optical Fiber and DDN requirement for nx 64kbps users. At the initial stage, each ONU will be connected to OLT in a point-to-point mode (across BTCL's dark fiber) forming a star topology, providing Voice & Data services.
The OLT will be connected with

a. PSTN Exchanges through V 5.2 interfaces
b. IP/MPLS cloud through Ethernet-based Interface (FE or GE)
c. Digital Data Network or MUX through Multiple Transparent E1
d. With ONU through STM-1/STM-4

The ONU will connected with

a. Telephone Subscriber through copper cable
b. ADSL+ Telephone User through copper cable
c. With ISP or HSI user through FE (optical)
d. Lease Line Subscriber through G.SHDSL

e. With OLT through STM-1/STM-4



Book Two

Chapter 3

ENVIRONMENTAL AND OTHER REQUIREMENTS

3.1 Climatic Condition

Bidder shall bear the full responsibility to ensure that all of the supplied equipment are capable of operating in Bangladesh environment without degradation. All of the supplied equipment must work satisfactorily under the following environmental conditions. Deviation from these values shall be considered as "**major**".

a) Normal Operation
Temperature Range : 15°C to 35°C
Relative Humidity : maximum 90 %
b) Short-time Operation (maximum of 06 hrs at a stretch)
Temperature Range : 5°C to 45°C
Relative Humidity : maximum 95 %

3.2 Physical Requirement

All components of all of the equipment shall be of highest possible quality design and fully tropicalized to be used for continuous operation. The metal surface shall either be galvanized or painted by spray or plated with surface treatment. There shall be no sharp edges or projections. All power equipment and cables shall be protected with fuses of proper ratings. All equipment racks, sub-racks and slots shall be clearly marked in English letters for proper recognition. All equipment racks, sub-racks and slots shall also be provided with proper earthing and shall be protected against any surge.

3.3 Operating Voltage

The equipment shall operate satisfactorily on the nominal voltage of -48V DC and within a voltage range of -43 to -55 Volts DC. Deviation from these values shall be considered as "major". If the server of the NMS runs by DC power, that will be preferable .

3.4 Environment and Power Supply Monitoring

The equipment must provide a complete range of environment and power supply monitoring functions. It must monitor such parameters such as temperature, smoke, humidity, primary power supply, batteries status in ONU site. The monitored information must be reported to the operation and maintenance centre in time.

3.5 Guarantee for Hardware

The Bidder shall guarantee that, the hardware of the system will run without any major technical hazard for at least up to 5 (five) years after the date of issuance of FAC. Deviation shall be considered as "**major**".

Book Two

Chapter 4

REQUIREMENTS OF MULTI SERVICE ACCESS NETWORK EQUIPMENT

4.1 General Requirements

Multi Service Access Network Equipment to be installed under this purchase will be of two types depending on network connectivity and interface/line cards. Optical Line Terminal (OLT) will be installed at existing Exchange Site of BTCL and Optical Network Unit (ONU) will be installed at new places from where service to the subscriber will be provided. The OLT will be connected with PSTN Exchanges, Internet, Digital Data Network and Transmission Mux whereas ONU will be connected with telephone, ADSL, Internet and Leased line & DDN subscriber.

4.1.1 The main components of ONU and OLT should be the Interface Cards and optical transmission unit; besides, its auxiliary functional units include subscriber line test, power supplies, and environment monitoring module, battery and distribution frame.

4.1.2 All the control card and power supplies should be n+n redundant to avoid any single point of failure.

4.1.3 The OLT & ONU Equipment should be capable of delivering Voice, High Speed Internet, & Leased Line (point to point) Services.

4.1.4 The OLT & ONU Equipment should be capable of modular expansion. Configuration and expansion of it should allow great flexibility. The bidder should provide the method of expansibility in detail to describe what are the cards/module required to meet expandability. In case of OLT the expansion shall be made only by inserting the interface cards mentioned in annex 1.1 and in case of ONU the expansion shall be made only by inserting the interface cards mentioned in annex 1.2.

4.1.5 The OLT / ONU should be manageable from highly efficient NMS with GUI interfaces that is easy to operate.

4.1.6 The bidder should state the compliance with OLT / ONU technical standards, terminal management standards, and broadband line test standards.

4.1.7 The OLT/ONU has to be equipped with line testing card to allow test of all types of line cards from OLT.

4.1.8 The ONU shall support ATM and IP uplinks simultaneously to adapt to the current network status and future network evolution. For the connection between different shelves inside the ONU, if any extension shelf is fault, there should be no infection to other extension shelf.

4.1.9 The ONU shall have the capability to evolve to an Access Media Gateway (AMG) on the same system platform providing a seamless migration to NGN network in future. The bidder has to submit adequate document with sketch to proof it.

4.1.10 The ONU must support V5.2 and H.248 uplink concurrently on a single hardware platform, providing a smooth migration from TDM to IP-based NGN network The TDM voice and Voice over IP services must be allocated flexibly to specific end users without limitations.

4.1.11 The ONU must support Self-Switching function within it's subscriber, in case of failure of link with OLT. In future, after ONU is upgraded to the AMG in the same hardware platform, the ONU must support Self-Switching function, in case of failure on the H.248 link to the soft switch, ONU must be able to retain existing RTP connection, and enabling new call to be established within itself.

4.1.12 Whenever a call is established within the ONU own subscribers, the DSP resources with OLT shall not be occupied, saving those DSP resources for other outgoing calls connection and improving voice quality.

4.1.13 The system shall be able to support remote cascading by TDM mode G.SHDSL via twisted pair, which shall be deployed in area lack of transmission resource of fiber optic.

4.1.14 All the type subscriber related activities (such as ana

4.1.15 The proposed equipment must support DHCP option 60/82 and PPPoE intermediate agent.

4.1.16 OLT/ONU should support port-based leased line access.

4.1.17 The Multi service Access Network Equipment must support –

(a) IGMP snooping with IGMP messages forwarding to the network
(b) IGMP proxy
(c) IGMP static join function for fast zapping must be supported.

Each Deviation from clause 4.1.1 to 4.1.5 will be treated as "Material" and any deviation from clause 4.1.6 to 4.1.16 will be treated as "Major" Deviation.

4.2 Functional Requirements

4.2.1 Basic Interfaces

4.2.1.1 The OLT Equipment should provide following Interfaces

a. Digital trunk Card supporting V 5.2 protocol to connect with the Local Exchanges.
b. STM-4 & STM-1 optical interface for transmission
c. FE and GE interface to connect with data equipment. The interface protocol provided should conform to the relevant regulations of IEEE802.3z.
d. Clear Channel E1 to connect with Digital Data Network or MUX

Deviation will be treated as "Material".

4.2.1.2 The Indoor ONU Equipment should support following interfaces-

a. POTS line card to provide basic telephony service
b. ADSL Line card to provide simultaneously voice and internet service
c. Fast Ethernet Interface Optical card to provide internet service over optical fiber at a distance of about 10 km. The interface protocol provided should conform to the relevant regulations of IEEE802.3z.
d. VDSL subscriber line card
e. G.SHDSL interface card
f. nX 64 kbps interfaces

Deviation will be treated as “Material”.

4.2.2 Transmission Interfaces

4.2.2.1 The OLT Equipment should provide STM-1 or STM-4 Interface and the interface should support at least 10 km distance to connect with it’s ONUs

4.2.2.2 The ONU Equipment should provide STM-1 or STM-4 Interface and the interface should support at least 10 km distance to connect with it’s OLT.
Deviation will be treated as “Material”.

4.3. Subscriber Interfaces

4.3.1 The G.SHDSL interface must conform

a. the specifications of G.SHDSL/ADSL2+ ANNEX M
b. should support all integral multiples of 64kb/s from 64Kb/s to 2.3Mb/s in both directions

Each of the deviation will be treated as “major”**.**

4.3.2 ADSL interface should be provided and conform to

a. the specifications of ITU-T G.992.1 (including Annex B) and G.992.2.
b. It should be able to interconnect with third party CPE.
c. should support ADSL2+ to comply with G.992.5.
d. should support automatic selection of ADSL, ADSL2, ADSL2+.
e. ADSL access equipment should have certain LAN access function.
f. All integral multiples of 32kb/s from 32kb/s to at least 6.144Mb/s in downstream;
g. all integral multiples of 32kb/s from 32kb/s to at least 640kb/s in upstream should be supported.

Each of the deviation will be treated as “major”.

4.3.3 Ethernet interface ONU should support

a. The interface protocol provided should conform to the relevant regulations of IEEE802.3z.
b. FE and GE interface must support transparent transport and L2 switch function both in the same board.
c. FE and GE board, the convergence direction must not be less than 24.
d. “The Ethernet (FE and or GE) interface, to connect individual subscriber, should be of optical interfece. Electrical Interface can be used only to connect network equipment of same premises.
e. FE and GE board must support QinQ and MPLS label
f. FE and GE can support LPT (link path through) function.
g. FE and GE should support Jumbo frame packet.
h. Should support bandwidth control (Rate limit) with a granularity of at least 64Kbps.
i. The Trans-receiver interface should support at least 10 km distance

bidder can provide additional modular switches with required capability to provide support mentioned in h & i .

Each of the deviation from a to g will be treated as “major” and deviation from h & i will be treated as “Material”

4.3.4 The Analog subscriber lines interface should support

4.3.4.1 Electrical properties

Subscriber loop resistance,	max. 1200 Ohm
Subscriber loop resistance including a telephone set	max. 1800 Ohm
SL insulation resistance:	
Wire to wire	min. 20000 Ohm
Wire to ground	min. 20000 Ohm
SL wire to wire capacitance	
Wire to ground	not more than 0.5 mkF
Equipment attenuation	max. 1 dB
Support of program management by the enhancement level	-3dB – 3dB (Tx) -7dB – 7dB (Rx)
Near end attenuation on 1020 Hz frequency	not more than 69.5 dB
Dialing unit transmission rate	7-13 pulses/s
Operating voltage	- 42 V – - 72 V,
Nominal voltage	- 48/60 V
Subscriber boards protection	in compliance with ITU-T K.20

4.3.4.2 Protection of subscriber terminals (ports) against over-current and over-voltage should be provided (MDF)

4.3.4.3 Every port must have power supply management to decrease board over-heating.

4.3.4.4 Protection of subscriber terminals against short circuit, circuit or leaking between A or B and earth, or short circuit between two ports should be provided on the board.

4.3.4.5 Bidder must provide detailed description of subscriber board protection mechanism.

4.3.4.6 Must support

a. ordinary and reversal-polarity
b. 2W/4W Analog leased line
c. 12 / 16 KHz Metering

Each of the deviation will be treated as “major”.

4.4. Management Interface

4.4.1 The equipment should provide management interfaces that are used for local maintenance and management. The bidder should tell the types and the rate of these management interfaces.

4.4.2 The equipment must provide management interfaces that are used for remote centralized maintenance and management. The bidder should tell the types of these management interfaces.

Each of the deviation will be treated as “major”.

4.5 After power failure and service recovery the OLT/ ONU should return to the previous running status before power failure.

Deviation of clause 4.5 will be treated as “material”.

4.6 Power Supply Requirements for ONU

4.6.1 The present equipped capacity of the rectifier will be at least double to capacity required for capacity of ONU. The design shall be based on parallel redundant N+1 system. One rectifier module shall be reserved for standby purpose in case of any of the active rectifier modules fails.

4.6.2 The rectifier system shall be modular in design.

4.6.3 The rectifier AC input range is from 160~285VAC

4.6.4 The rectifier shall be of the latest technology and must be of the switch mode type. Temperature compensation circuit to adjust float voltage against temperature and low voltage disconnect / reconnect must be provided in the system.

4.6.5 The modular rectifier suite shall consist of control module and distribution module.

4.6.6 Battery temperature compensation function is necessary for monitoring modules

4.6.7 Automatic battery testing facility

The rectifier must have automatic battery discharge facility with the following requirements:

a) Facility can be disabled or enabled,
b) Time, date and duration of the test can be set through the controller,
c) Once activated, the output voltage of rectifier shall be reduced to below 43.2VDC (settable) and battery is discharged to the load.
d) If the voltage drops below a preset voltage (usually 48V and settable) before the test period, an alarm shall be triggered to indicate battery failure.
e) If there is a previous power failure and to prevent wrong battery test results, a settable period shall be programmed in the controller to prevent any battery test. Period shall be settable up to 1 week.

4.6.8 Rectifier capacity shall be based on recharging requirement.

4.6.9 Standby battery time is 8 hours for present capacity of ONU with recharging time within 10 hours to 80% capacity after fully discharge.

4.6.10 The bidder has to submit the detail calculation of battery & Rectifier power requirement to justify the proposed capacity.

Any deviation from 4.6.2 to 4.6.10 will be treated as “Major deviation”

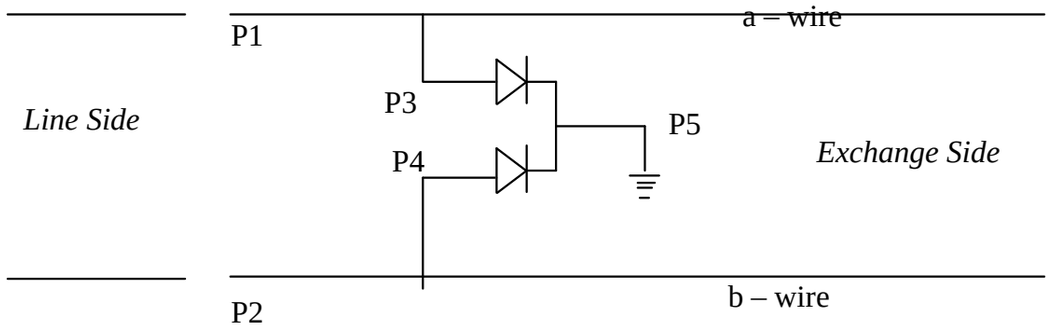
4.8 Main Distribution Frame (MDF)

The ONU shall be equipped with MDF for subscriber connection. This may be inbuilt with ONU rack or may be separate. The MDF shall be of modular structure, miniaturized to the extent possible and easily maintainable. The mechanical structure shall be back-to-back for Vertical and Horizontal side. The cable-pair insertion shall preferably be punch-type; the blocks shall allow insertion of jumper-wires of sizes 0.4 mm to 0.6 mm dia. Any deviation shall be treated as "**minor**".

ii) Each of the MDF shall have the following minimum criteria and any deviation shall be treated as "**minor**".

a) Minimum number of total available pairs = Equipped subscriber capacity.
b) Number of OSP pairs in each block = 100 (or 10 x 10).
c) Grounding: Less than 2 ohms.

iii) Each MDF shall be fully equipped with 5-point protection device assemblies. The protection shall be of the following type. Absence of such protection in the MDF shall be treated as "**major deviation**".



P1 = P2 = Over-current Protection (Ceramic or Glass or others) shall become open-circuit on Over-current.
breaking voltage : 180V AC
breaking current : 1.25 A
breaking time : 2 ms

P3 = P4 = Over-voltage and Surge Protection (gas discharge or other type) shall become open-circuit on over-voltage or surge.

Nominal Voltage : 180 – 380V AC
Nominal Discharge Current : 1.3 A
Nominal Impulse Discharge Current : 100 A
Nominal Resistance : > 100 Mohms

Current Turn-off Time : < 200 µs

P5 = The common point; shall be connected to the frame ground.

a) The entire assembly shall preferably be enclosed in a single unit but the individual protectors may also be separate units;
b) If the protector assembly is taken out of the slot, the circuit between the line-side and exchange-side for both a-wire and b-wire must become open-circuit;

a) The assembly shall preferably be one for each cable-pair but multiple-pair assemblies will also be acceptable;

b) The assembly shall provide facility to detect & measure presence of any AC voltage or current;

c) The faulty protection-units inside the assembly shall preferably be changeable in the field;

d) Facility shall be provided so that if any of the assembly becomes faulty (either the over-current or over-voltage device), it will trigger an alarm-loop. The bidder will also provide visual and audio alarm units, with that loop, inside each MDF;

e) The supply shall include 125% units of the cable-pairs available of each MDF.

iv) Each of the MDF for ONU shall include supply of at least 20% spare for blocks. Any deviation shall be treated as Major.

Book Two

Chapter 5

REQUIREMENTS OF THE OPERATION AND MAINTENANCE FACILITIES

The system should include a Network Management System (NMS) for proper operation and maintenance of all the Multi Service Access Network Equipment covered by this purchase. The NMS shall include all necessary hardware and software to be installed on a complete turn-key basis including design, installation, testing and commissioning at Moghbazar. Bidder can propose one or more suitable hardware platform for the proper functioning of NMS. However, the main hardware system that will perform the operation and maintenance of ONU for POTS,ADSL & G.SHDSL subscriber, should have following characteristics as described 5.1.1 & 5.1.2. The hardware for other NMS should be of SUN Solaries or equivalent or better high quality with useable 100 GB Hard Disk Drives in RAID configuration and based on UNIX or LINUX operating system. Any deviation will be treated as "Critical Deviation."

5.1 Hardware/System Requirements of NMS

5.1.1 Server System

The NMS shall be equipped with SUN or Solaris equivalent or better high-quality server system in duplicated configuration. The Operating Software shall be based on the latest version of UNIX or LI NUX. The internal network architecture shall be Ethernet LAN. The deviation shall be treated as "Material Deviation".

5.1.2 Memory Devices

a) The NMS system shall have Hard Disk Drives in RAID configuration as the primary memory device. At least 1(one) External Compact Disk Re-writable Drives shall be provided to act as the secondary memory device.

b) The capacity of the hard drive shall be at least 100 GB usable SCSI disk space configured as RAID level 5 with one disk as hot spare.

The deviation shall be treated as "Major Deviation".

5.1.3 Server and Operator Terminals

a) Server Terminal has to be provided at NMS site. The Server Terminal shall be complete in all aspects to work as PC and shall be equipped with Monitors (at least 17" wide), Hard Drive (at least 150 GB), RAM (at least 2 GB) and DVD writer .

b) Operator Terminal(s) shall be there at all OLT sites. Operator Terminal shall be equipped with Monitors of at least 17" wide LCD), Hard Drive (at least 150 GB), RAM (at least 2 GB), DVD Drive. At least 2(three) nos. of such terminals shall be provided.

c) 2.5" Portable USB-Mass storage device for taking data back up.

d) 10 (ten) nos of USB Pen drive with necessary capacity of at least 8 GB.

e) DC power is preferable. If DC option is not available the inverter should be capable of taking the load along with other equipment (Printer, LCD panel etc.)

The deviation shall be treated as “Major Deviation”.

5.1.4 Printers in the NMS

The supply shall include at least 1(one) number of Printer having following specifications connected in the LAN of the NMS.

a) Resolution : 600 X 1200 pixels Minimum
b) Pages per minute : Minimum 32
c) Memory : 32 MB
d) Paper Tray : Three trays, one of 100-Sheets and two of 500-sheets
e) Network Interface Card : 10/100 base - TX
f) Paper size : A3/A4/ Legal/Letter

The deviation shall be treated as “Major Deviation”.

5.1.5 Inverters

The supply shall include necessary inverters for the equipment that uses AC sources. The inverters shall be on N+1 redundancy configuration and shall use the exchange -48V DC as source power. The deviation shall be treated as “Major Deviation”.

5.2 Software Requirements of NMS

5.2.1 Password Protection

The main features and data of the software shall be protected by multi-level password control. Modification of the Network data and Subscriber configuration data shall also be protected by passwords. The system password will not be erased or corrupted during system re-boot and/ or redundant server switchover or for any other reasons. Deviation shall be considered as “m**aterial”.**

5.2.2 Immunity against propagated faults

All modules of the Software shall be immune against propagation of faults from any other software or hardware modules and shall be protected against any mutilation of data. The faulty software module shall also not propagate its own fault to any other software or any hardware modules. Deviation shall be considered as “material”.

5.2.3 The language of the instructions shall be in English.

5.2.4 For commands which will change basic network/system data or which may cause reconfiguration of the system or critical errors, provisions will be provided for verification before execution

5.2.5 Records of all executed commands shall be kept in log files and these files shall be stored in system hard disk

5.2.6 Any deviation (each of them) from the characteristics mentioned in 5.2.3 to 5.2.5 shall be considered as "**major**".

5.2.7 The bidder shall note that if its language of instruction is in any language other than English, its system shall be considered to be having "**Change of Substance**".

5.3 Guarantee for Introduction of new Features

5.3.1 The bidder shall guarantee that, if BTCL or TSS requests for introduction of any new/ additional subscriber and/or system features in the supplied system, the bidder shall try its best to do so.

5.3.2 The price for such new/ additional features shall be logical and realistic and shall be fixed up by mutual discussion.
Any deviation shall be considered as "major".

5.4 Guarantee for up-gradation of Software Version

5.4.1The Bidder shall guarantee that it will inform BTCL as well as TSS for all subsequent up-grades of the software version of the supplied system.

5.4.2 If the upgrade becomes mandatory for any expansion of the supplied system or addition/ modification of any prevalent subscriber feature, such software upgrades shall be done "free of charge" to TSS.

5.4.3 If such upgrade becomes mandatory for proper operation & maintenance of the network in its present configuration and form, such upgrades, including supply of new software and hardware, shall be done "free of charge" to TSS.

5.4.4 If any non-mandatory upgrade is done on request from BTCL or TSS, but does not involve any change or addition in hardware, the bidder, upon request from BTCL or TSS, shall install such upgraded software "free of charge" to TSS.

5.4.5 But, if any non-mandatory software upgrade, to be done at the request of BTCL or TSS, involves any hardware change and/ or additional hardware, charges will be incurred for prices for the changed and/ or additional hardware and the new software. In such cases, the prices for such new and/ or additional hardware and software shall be fixed on mutual agreement and in consistent with the market prices prevalent at the time of such request.

5.4.6 Bidder's refusal to agree to the above sub-clauses 5.4.1 to 5.4.5. shall be considered as "material deviation".

5.5 Guarantee for Software

The Bidder shall guarantee that, the Software of the system will run without any technical hazard for at least up to 5(five) years after the date of effect of FAC. If any fault and/ or bug is detected within this period, the bidder shall correct these faults and debug the software at his own costs and at "free of charge" to TSS. Bidder's refusal to agree to this guarantee shall be considered as "material deviation".

5.6 Functional Requirements of NMS

5.6.1 The NMS shall have the capability to support the following management functions for all elements:

a) Fault Management
b) Configuration Management
c) Performance Management
d) Security Management
e) Capacity and Planning Engineering Tool

All the management functionalities shall be implemented in the NMS as a set of interactive application components using client-server architecture and can be vertically and horizontally integrated.

5.6.2 The NMS should support the following:

a) Graphical User Interface (GUI)
b) Real-time alarm display and collection
c) Card/circuit level diagnosis
d) Interface line status monitoring, both subscriber lines and network interface.
e) Performance monitoring and traffic measurement.
f) Network/NE configuration management.
g) Routing table management
h) SNMP-based network management interface(s) to support third party network management system.
i) adaptive to ITU-T Q3/CMIP.
j) Latest version of the Windows NT, Solaris OS and HPOV or any management system available.
k) Implementation of software patches and releases on the NGN nodes remotely.

5.6.3 Basic Features and Capabilities

The NMS shall provide:

a) Preferably a single Application Program Interface (API) for all network elements regardless of Brand and Model.
b) Configuration planner for simplifying the task of future network planning and configuration.
c) Automatic copy of configurations at device, cards, and ports level to the customer information database system within the NMS.
d) Network Integrity check at the network, device, card, and port levels.
e) End to end path management.
f) Advance alarm management setting for priorities and types.

g) Multiple network managers support with different access authorities.
h) Network element status displayed by colors.
i) Identification of problems through event correlation. It should intelligently correlate events into high level alarms, immediately pinpointing the root cause of network problems.
j) Web-based user interface.
k) Scalable architecture

5.6.4 Fault/Alarm Management

The NMS shall support (but not limited to) the following fault and alarm management capabilities:

a) Detected errors/unusual network behavior should be isolated and controlled.
b) Results of errors/unusual network behavior should be displayed in graphical and tabular form.
c) Alarm facilities should permit the easy identification and correction of faulty element.
d) Alarms should have a status of active, deferred, or cleared and should be in active state when first received.
e) The severity of the alarm, full alarm message and time of delivery should be available for display and are logged in the alarm database.
f) The administrator should be able to set various thresholds for alarm reporting, including filtering by severity, number of occurrences within a given period and interval between occurrences.
g) Management System should provide alarm signals confirmation, including user ID confirmation and time of confirmation
h) All test result should be saved in data base

5.6.5 Configuration Management

The Configuration Management should initialize and close down manage objects, collect information on demand about the current condition of the network, obtain announcements of significant changes in the condition of the network, and change the configuration of the Network and the Network Elements.

5.6.6 Performance Management

The NMS should support, but should not be limited to the following performance management capabilities:

a) Monitor network throughput and real-time Bit Error Rate must be supported.
b) Set thresholds for various variables, such as error rates or link utilization.
c) Continuous background diagnostics during system uptime are required for early detection of fault conditions and timely activation of alarms.
d) Log and save all or defined events for present and future reference.
e) All man-machine interfaces shall be in a Graphical User Interface.

Any deviation of the above requirement shall be treated as “Major Deviation”.

5.6.7 Security Management

The NMS should support (but not limited to) the following security management capabilities:

a) Secure access between network elements and the network manager.
b) The system should incorporate security measures against unauthorized personnel to access the office data/programs and entering of commands.
c) Several access levels according to the order of their influence on program performance should be identified with the corresponding password.

Any deviation of the above requirement shall be treated as “Major Deviation”.

Subscriber Circuit Testing and Phone Testing Requirements

I. Subscriber Circuit Testing

1) Pulse dialing

Break-make ratio 1: (1±0.2)
Pulse speed: 12.5±1pps
Number interval: =400ms

2) Dual tone dialing

Frequency deviation: ±1.5%
Level: Low frequency group: -9±5dBm
High frequency group: -7±5dBm
Dual frequency signal level difference: 2±1dBm
Total distortion: 20dB lower than fundamental wave level
Signal limit duration: > 40ms/bit
Signal interval duration: > 40ms

II. Phone Testing

1) Ringing current

Voltage: 75V±15V
Frequency: 25Hz±3Hz
Break-make ratio: 4s: 1s
Time deviation: ±5%

2) Signal tone (450Hz)

Frequency: 450 Hz±25Hz
Level: -10±3dBm
Harmonic wave: <10%
Busy tone: break-make duration 350ms: 350ms, time deviation <±10%

Ring back tone: break-make duration 1s: 4s, time deviation <±10%

3) Pulse dialing test

Dialing speed: 8~20pps
Break-make ratio: test range: (1.0~3.0)
Test error: ±5%

4) Dual tone dialing performance test

Frequency and frequency deviation
Frequency (standard: low frequency group 697, 770, 852, 941Hz, high frequency group 1209, 1336, 1477, 1633Hz)
Frequency deviation: reliable receiving is ±2%; surely no receiving is ±3%; and not surely receiving is ±2%~±3%
Level:
Signal frequency receiving range in dual frequency mode: -4~-23dBm
Signal frequency non-operation level in dual frequency mode: =-31dBm
Dual frequency level difference: =6dBm
Signal limit duration: 80ms/bit
Signal interval duration: 40ms

5) Opposite polarity

Time interval: 5s
Time deviation: ±5%

6) Howler tone

Frequency: 950Hz±50Hz
Frequency: 6dBm~140dBm
Harmonic wave: <10%

7) Loop resistance measurement

Test range: 0~3k
Test error: ±5%

8) Test speed

Test duration of twelve indices for the subscriber line: <30 seconds

Any deviation of the above requirement shall be treated as “Major Deviation”.

CHARACTERISTICS TEST	METHODS	SPECIFIED RESULTS
Mode field diameter		.. ±. µm
Cladding diameter		.. ±. µm
Coating diameter TRANSMITTED .. ±. µm		
Mode field concentricity error NEAR-FIELD <.. µm		
Cladding non circularity TECHNIQUE <. %		
Cladding concentricity error		<.. µm
Continuous tensile test	SCREEN TEST	0.5 daN
Cut-off wavelength lc	TRANSMITTED POWER TECHNIQUE	... <lc<... nm
Unit attenuation for 1285 <l < 1330 nm for l = 1550 nm	CUT-BACK TECHNIQUE	<.. dB/km <... dB/km
Transmission curve regularity	BACK SCATTERING TECHNIQUE AT 1300/1550 NM	0.1 dB
Chromatic dispersion coefficient for 1285 <l < 1330 nm for 1270 < l < 1340 nm for l = 1550 nm	TIME-DOMAIN or FREQUENCY DOMAIN MEASUREMENT	<.. ps/nm.km <.. ps/nm.km <.. ps/nm.km
Polarisation Mode Dispersion		ps/(km)

Book Two

Chapter 7

REQUIREMENTS OF THE ANCILLARY FACILITIES

7.1 Patch Panel at different sites

(i) BTCL is installing IP DSLAM equipment under another Tender. To install MDF patch panel, to lay internal cable from MDF room to DSLAM room are the scope under this project. The following sites shall be equipped with required number of Patch panel in the existing Main Distribution Frame (MDF) room of BTCL. There shall be two patch panels. One patch panel shall be used for termination of subscriber cables coming from telephone exchange via horizontal side blocks and the other shall be used for termination of subscriber outside plant copper cable network via vertical side blocks (as described in the figure below).

(ii) The cable-pair insertion shall preferably be punch-type; the blocks shall allow insertion of jumper-wires of sizes 0.4 mm to 0.6 mm dia. The patch panel may be installed in existing MDF, if there is facility. Otherwise the bidder shall provide MDF frame. However, the bidder shall quote MDF rack/frame and patch panel (tag block) separately for all the sites (except secretariat). The actual quantity will be finalized during BoQ preparation upon required survey. Any deviation will be treated as “Major”

(iii) Patch panels at each MDF shall have the following minimum criteria and any deviation shall be treated as “minor”.

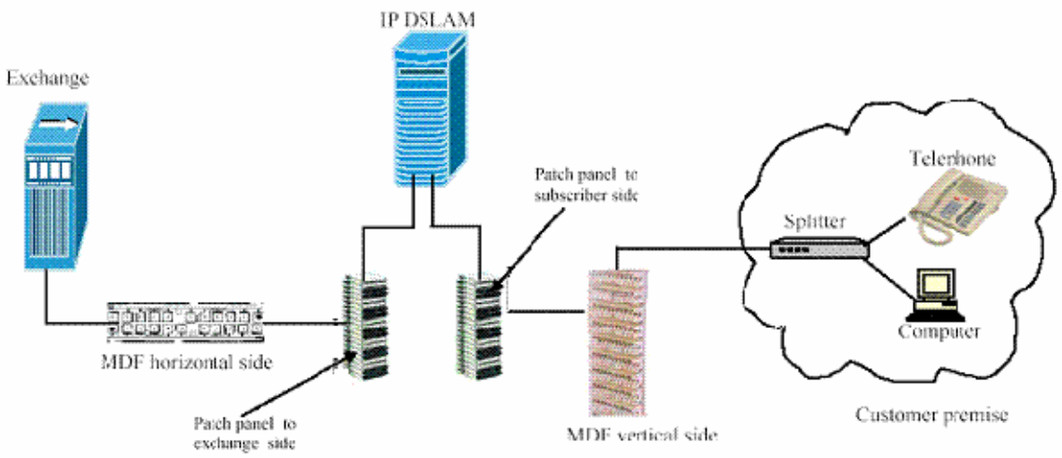
a) Minimum number of total available pairs in Exchange side patch panel as shown in the below list

b) Minimum number of total available pairs in Subscriber side patch panel : as shown in the below list

		Subscriber side patch panel	Exchange side patch panel
		Requirement	Requirement
1	Moghbazar, Dhaka	3500	3500
2	SBN, Dhaka	4000	4000
3	Gulshan, Dhaka	5000	5000
4	Central, Dhaka	4000	4000
5	Chawkbazar, Dhaka	1500	1500
6	Comilla	1500	1500
7	Sayedabad, Dhaka	1500	1500
8	Fakirapool, Dhaka	1500	1500
9	Mirpur, Dhaka	2000	2000
10	Nilkhet, Dhaka	3000	3000
11	Uttrara, Dhaka	4000	4000
12	Narayangonj, Dhaka	1500	1500
13	Khilgaon, Dhaka	1500	1500

14	Cantonment, Dhaka	1500	1500
15	Agrabad, Chittagong	3000	3000
16	Nandan Kanon, Chittagong	1000	1000
17	Central Sylhet,	1000	1000
18	Central, Khulna	1000	1000
19	Bogra	1000	1000
20	Barisal	1000	1000
21	Rajshahi	1000	1000
22	Gazipur	1000	1000
23	Savar	1000	1000
24	Mymensingh	1000	1000
25	Jessore	1000	1000
	Total	49000	49000

c) Maximum number of termination pairs in each block of patch panel : bidder's choice



d) Grounding: Less than 2 ohms

7.2 Optical Distribution Frame (ODF)

The Bidder shall provide necessary Optical fiber termination facility (Optical Distribution Frame) for terminating optical fibers to connect LAN ports of the switch.

i) Each of the ODF shall have the following criteria and any deviation shall be treated as "minor".
   1) Adopting the popular 19" rack
   2) having splicing and distribution module
   3) Stable equipments for fixing, stripping and grounding of the optical fibers
   4) Suitable for ribbon and non-ribbon optical fibers
   5) Suitable for installation of FC, SC and ST adaptors
   6) Optical fibers, fiber optic pigtails and jumpers are separate, without disturbing each other
   7) Fiber optic cable management

ii) Each of the ODF shall be properly grounded as per standard specification.

iii) The ODF shall preferably be located in the same room where Switch is installed , but it can also be shifted to any other suitable room on mutual agreement. The maximum distance between the switch position and the ODF shall be kept to 30 meters.

iv) The supply, per site, shall include ODF termination facility as per annexure.

v) The ODF capacity shall as below-

Site	Requirement
Moghbazar, Dhaka 24	
SBN, Dhaka	24
Gulshan, Dhaka	48
Central, Dhaka	48
Chawkbazar, Dhaka	24
Comilla	24
Sayedabad, Dhaka	24
Fakirapool, Dhaka	48
Secretariat, Dhaka	48
Mirpur, Dhaka	24
Nilkhet, Dhaka	48
Uttrara, Dhaka	48
Narayangonj, Dhaka	24
Khilgaon, Dhaka	24
Cantonment, Dhaka	24
Agrabad, Chittagong	24
Nandan Kanon, Chittagong	24
Central Sylhet,	24
Central, Khulna	24

Bogra	24
Barisal	24
Rajshahi	24
Gazipur	24
Savar	24
Mymensingh	24
Jessore	24

7.3 Tip Cable

The bidder shall supply additional tip cable to TSS for jumpering purpose in the MDF in order to provide ADSL service to the telephone Subscribers . The tip cable shall be of 0.4 mm dia. The supply shall include 200 Kilometer-pair tip cable.

7.4 Internal Cable from MDF patch panel to IP DSLAM room

Bidder has to install 0.4 mm internal cable from MDF patch panel to IP DSLAM room to connect with splitter .

Book Two

Chapter 8

CRITERIA FOR EVALUATION OF BIDS : EVALUATION OF SUBSTANTIAL RESPONSIVENESS

8.1 The criteria for evaluation of substantial responsiveness of the received bids of this tender shall be according to the clauses described in this chapter of the tender document. If any bidder refuses to agree to all clauses of this chapter, his bid shall automatically be considered as “Substantially Non-Responsive”.

8.2 However, relevant clause(s) stated elsewhere in this document shall also be applicable if such clause(s) do(es) not contradict any or many clause(s) of this chapter.

8.3 Moreover, relevant regulations of the The Public Procurement Regulations 2006 (PPR 2006) published by The Government of Bangladesh (and available in web site **www.cptu.gov.bd) shall also be applicable. It may be noted that, if any clause or sub-clause of this document is detected to be in contradiction to any regulation or part of any regulation of the said PPR 2006, the text and definitions of the relevant regulation or its part of PPR 2006 shall prevail. The decision in this regard shall be finalized by** TSS**.**

8.4 The process of evaluation shall be in the following order:

i. Determination of Eligibility of the bidders
ii. Evaluation of Responsiveness of the eligible bidders.
iii. Financial Evaluation of Responsive bids and arranging the bids in ascending order on the basis of Evaluated Cost.
iv. Post qualification for selection of successful bidder

8.5 The TEC will first examine the contents of all “Mandatory Documents” of each Bid.

8.6 Bidder who will not give any or many of the required documents as mentioned in “Mandatory Documents”, the TEC of TSS shall consider that bid to be “not eligible” and reject the concerned bid.

8.7 The bids of only those Bidders, whose bids have not been treated as "not eligible" by the TEC of TSS shall automatically be considered as “Eligible” and shall be considered for further evaluation.

8.8 Any bid, declared by TEC of TSS to be “not eligible, can not be declared “Eligible” later on.

8.9 The TEC shall then preliminary examine the Tender documents of the Eligible Bidder to confirm that all documents in the “Mandatory Document” folder have been submitted in the prescribed format and determine the completeness of each document. If content of any of the

Mandatory Document(s) do not fulfil the requirement of the respective tender clauses the bid shall be treated as “Non-Responsive”.

8.10 The TEC shall also assess the offered equipment’s qualifications and bidder’s qualifications submitted in “Detail Technical Documents” folder. If TEC find that the requirement is not fulfilled as per Tender document the bid will be treated as “Non-Responsive”.

8.11 If, for any Bidder, the “Financial Documents” does not contain any of the Documents listed in Clause – 1.8 of Chapter 1 of this Book, the TEC of TSS shall treat the bid to be "Non-Responsive" and shall not continue with further evaluation of the bid.

8.12 Any bid found to be “Non-Responsive” during preliminary examination shall not continue with further evaluation of the bid.

8.13 After preliminary examination, the bids will be examined on technical aspects. During evaluation, TEC shall consider bidders’ compliances to various clauses and sub-clauses of this tender; but shall have the authority to conclude its own decision about such compliances.

8.14 If the bidder does not give any statement to its compliance to any of the tender clauses or sub-clauses or drops any clause or sub-clause in the “Schedule of Compliance”, its' compliance to that clause/ sub-clause (as applicable) shall be treated as “not complied” to that particular clause/ sub-clause.

8.15 If the bidder puts any condition to his compliance to any of the tender clauses and/ or sub-clauses, its' compliance shall be treated as “not complied” to that particular clause and/ or sub-clause.

8.16 TEC shall also consider the contents of various attached documents. If any content of the attached documents contradicts the compliance statement of the bidder to any of the clauses and/ or sub-clauses, the bidder shall be treated as “not complied” to that particular clause and/ or sub-clause. In all of such cases, decision of TSS shall be final.

8.17 If any component equipment of the offered system is already working in BTCL network, for conclusion about compliance to any clause/sub-clause, BTCL's practical field experience shall be given priority over bidder's statement regarding the relevant capabilities, performance, working reliability in field, operation & maintenance aspects, user’s satisfaction etc. of all those equipment. BTCL&TSS shall have the authority to draw its own conclusion regarding this aspect.

8.18 If, in answer to any query by TEC the bidder provides any or many clarifications to its bid, TEC shall consider those clarifications. However, if such clarifications contradict the relevant statements given in his original offer, the offered clarification(s) shall be disregarded.

8.19 The following deviations of any offer will be treated as “minor deviation” of the bid :

8.19.1 Any deviation which has already been termed as “minor deviation” in this tender document.

8.19.2 If specification of the offered equipment contain any "**non conformity**" from the tender specification.

8.19.3 If the bid BoQ has any shortage of quantity in any of the required item, where clause 8.21.4 or 8.24.3 is not applicable (for each of such short-quoted item).

8.20 Any item of "**minor deviation**" shall earn a score of 1(one) "**penalty point**".

8.21 The following deviations of any offer will be treated as "major deviation" of the bid :

8.21.1 Any deviation which has already been termed as "major deviation" in this tender document.

8.21.2 If the offered bid is "non compliant" to any clause or sub-clause of this document (for each *of such non compliant clause or sub-clause).*

8.21.3 If specification of the offered equipment contain any "**major deviation**" from the tender specification.

8.21.4 If there is any shortage in the list of quoted hardware and if such shortage can be accommodated in functional and physical structure of the bidder's offered equipment (for each of such shortages).

8.21.5 If the bidder fails to quote for any optional item of the tender (for each of such failure).

8.21.6 Any clarification given by the bidder which contradicts statements given in his original offer.

8.22 Any item of "**major deviation**" shall earn a score of 5(five) "**penalty points**".

8.23 The following deviations of any offer will be treated as "**material deviation**" of the bid :

8.23.1 Any deviation which has already been termed as "**material deviation**" in this tender document.

8.23.2 If combination of two or more deviations (either minor or major) in bidder's offered technical specification or conditions amounts to any contradiction of the functional structure of the system as specified in the tender.

8.23.3 If there is any shortage in the quantity of any hardware item or in the list of system hardware and if such shortages can not be accommodated in functional and physical structure of the bidder's offered equipment.

8.23.4 If the Bidder has changed either the language or format of any of the different forms attached with this document.

8.23.5 Any clarification given by the Bidder which changes the nature or structure of his original bid.

8.24 Any item of "**material deviation**" shall earn a score of 50 (fifty) "**penalty points**".

8.24 The following deviations of any offer will be treated as "**change of substance**" of the bid:

8.24.1 Any deviation which has already been termed as "**change of substance**" in this tender document.

8.24.2 Any contradiction in contents of different sections of attached documents which amount to change of nature or structure of the bid itself.

8.24.3 If the bidder refuses to provide answers or does not provide answers within stipulated time to any requested clarification(s).

8.24.4 Any condition, set forth by the bidder, in the Financial Documents.

9.24.5 If the Bidder changes the language or format of any of the bid proforma.

8.24.6 If combination of two or more deviations (minor and/ or major and/ or material) in technical specification or conditions in the offered bid combined amounts to such a deviation that the offered system does not at all satisfy the overall functional requirement and/ or objective of this procurement proceeding.

8.24.7 If any Certificate or any other document attached as part of the bid is found to be false or unauthentic.

8.24.8 If, for any Bidder, the "**Financial Documents**" part does not contain any of the prescribed BoQ Forms, duly filled up.

8.24.9 If the Bidder wishes to give any discount, it shall be given after the "Total Price" of the bid either as a lump sum or as a percentage. Any irregular discount shall be treated as "change of substance".

8.25 The bid offer, found to be containing any item of "**change of substance**" shall be treated as "Non Responsive".

8.26 All of the evaluated bids will be categorized by adding up the "penalty points" earned by each offer. The offer of any Bidder which has earned more than 80 (Eighty) "penalty points" shall be treated as "**Substantially Non-Responsive**" and the offer which has earned less than or equal to 80 (Eighty) "**penalty points**" shall be treated as "Responsive".

8.27 TSS's decision to treat any bid as "**substantially non responsive**" shall be final.

8.28 The bid(s) treated as "**substantially non responsive**" shall not be considered in the further stages of evaluation.

Book Two

Chapter 9

CRITERIA FOR EVALUATION OF BIDS :
Evaluation of Financial Parts of Responsive Bids and Selection of Successful Bidder

9.1 The TEC shall evaluate Financial Part of each Tender that has been determined, up to this stage of the evaluation, to be substantially responsive.

9.2 The total price quoted by the "**Responsive**" bidder in his bid i.e., "The Quoted Total Price" shall not be the criteria for selection of the "Successful Bidder".

9.3 All of the "Responsive" bids will be further evaluated considering all the tender requirements to calculate the "Evaluated Total Price" of the bid.

9.4 The process of calculation of the "Evaluated Total Price" shall be in accordance with the clauses described in this chapter.

9.5 TEC shall evaluate the contents of all of the BoQ forms submitted with the bid.

9.6 During such evaluation, the unit prices and discount (if any) quoted by the bidder shall be considered as **final**. Change of prices during evaluation stages shall not be allowed.

9.7 There shall be full conformity between the summary or total prices and their related breakups of unit prices. If any discrepancy is found, the relevant unit prices shall be considered as a reference price for evaluation purpose.

9.8 The bidder shall quote for all items it deems necessary for turn-key completion of all scopes of works described in this tender. No subsequent addition of any new item(s) in the BoQ will be allowed with additional price.

9.9 The successful bidder shall be responsible for turn-key implementation of the project and for any shortfall of items subsequently detected, it shall be considered that the bidder proposes to supply those items of required quantities "**free of charge**" to TSS for this purchase and for any subsequent purchases.

9.10 If the Bidder has quoted the price for any item as "free" or "zero", it shall be understood that the price would be same (i.e. free or zero) for any subsequent expansion up to the minimum final capacity of the system.

9.11 If, during evaluation, it is found that the bidder has not quoted any or many mandatory item(s), it shall be considered that the Bidder proposes to supply the non-quoted items of required quantities "**free of charge**" to TSS.

9.12 If, during evaluation, it is found that the bidder has quoted for less quantity of any mandatory item, it shall be considered that the Bidder proposes to supply the shortfall quantity "**free of charge**" to TSS.

9.13 In case any Bidder has quoted an under-sized item, it shall be understood that the bidder proposes to supply any amount of that item to TSS, but of proper size (as described in tender specification) with the same price i.e. his quoted price for the under-sized item and that this price would also be valid for any subsequent expansion of the system, any time on demand and for the entire life-time of the project, i.e., 5(five) years from the date of issuance of FAC.

9.14 In case any mandatory item has been quoted as optional, its price shall be added as mandatory and the unit price shall be taken from the bidder's own quotation.

9.15 If the bidder has given any regular discount in the bid, such discount shall be treated in percentage of the total bid price and each of the unit prices of the bid shall be re-fixed by reduction with the same percentage [i.e., new unit price = (discounted total price ÷ total price before discount) x quoted unit price]. Such re-fixed unit prices shall be regarded as the final unit prices for that relevant item of the bid. Such re-fixed unit prices shall be valid for any subsequent purchases up to the entire life-time of the project, i.e., 5(five) years from the date of issuance of FAC.

9.16 For each of the "responsive" bids, TEC shall calculate the "Evaluated Total Price" after making the relevant and necessary corrections as stated in this chapter.

9.17 All the "Responsive" bids will be listed in chronology of the "Evaluated Total Price"; the bid with the lowest value of the "Evaluated Total Price" shall be on top of the list; the bidder with the next higher value of the "Evaluated Total Price" shall be next to the top; and so on.

9.18 Prior to finalising the Tender Evaluation Report including recommending contract award, the Tender Evaluation Committee shall determine whether the tenderer whose tender has been determined to offer the lowest evaluated total cost has the capability and resources to effectively carry out the contract as offered in the tender. This shall be termed as "Post Qualification".

9.19 Determination of successful bidder shall be based upon examination of the documentary evidence(s) of the Equipment's qualification and Tenderer's qualifications alongwith other documents submitted by the Tenderer. References or statement submitted by the Tenderers about his previous or current working experience in BTCL or elsewhere may be verified, to obtain the most up-to-date information available concerning the Tenderer.

9.20 As part of the post-qualification task, the TEC shall take necessary steps, whichever fits desirable and practical to them, to verify information contained in its tender. The TEC shall also verify the contents of all the documentary evidences. The committee shall have the authority to contact the persons/ organizations issuing the documents to ascertain the authenticity. If for any bidder, either the content or the source of any of the supplied document is found to be unauthentic, or if the issuing organization/ person refuses to certify the

authenticity of any document, the Tender Evaluation Committee of TSS shall treat the bid to be "Non-Responsive" and shall not continue with further evaluation of the bid. If any document is proved to be fake or unauthentic or any information is found to be incorrect, TSS shall take appropriate measures as per **The Public Procurement Regulation 2006.**

9.21 An affirmative determination shall be a prerequisite for award of the Contract to the Tenderer. A negative determination shall result in rejection of the Tenderer's Tender, in which event TSS shall proceed to the next lowest evaluated Tender to make a similar determination of that Tenderer's capabilities to perform satisfactorily. In this process the "Successful Bidder" will be selected.

9.22 TSS reserves the right to accept any Tender, to annul the Tender process, or to reject any or all Tenders, at any time prior to contract award, without thereby incurring any liability to the affected Tenderers, or any obligation to inform Tenderers of the grounds for TSS's actions.

9.23 After the opening of Tenders, information relating to the examination, clarification, and evaluation of Tenders and recommendations for award shall not be disclosed to Tenderers or other persons not officially concerned with the evaluation process until after the award of the Contract is announced.

9.24 If any guideline not covered by this chapter but required during evaluation process, the TEC shall consult with PPR 2006.

Book Two

Chapter 10

MECHANISM FOR AWARDING THE CONTRACT

10.1 Not withstanding whatever is stated in other clauses of the tender documents, the mechanism for awarding the "**Purchase Contract**" of this tender shall be according to clauses described in this chapter of the tender document.

10.2 A letter of intent, accompanied by a draft contract, will be issued by TSS to the "successful bidder".

10.3 The successful bidder will be required to give its answer, within 15(fifteen) working days after issuance of that letter of intent, stating its willingness to sign the proposed contract.

10.4 If no answer is received by TSS within this stipulated time, it shall be inferred that the bidder is unwilling to continue with the process of signing of the contract.

10.5 If no answer or a negative answer has been received from the selected bidder, TSS will unilaterally cancel the letter of intent and start subsequent proceedings of its choice. In such case, TSS reserves the right to forfeit the bid money of the defaulting bidder.

10.6 Performance Security Bond

10.6.1 The successful bidder shall, with its answer to the letter of intent, have to submit, a "**Performance Security Bond**", as mentioned in the concerned document, in the form of Pay Order/ Bank Draft/ Bank Guarantee from any recognized Bank in Bangladesh, in favour of "Managing Director, Telephone Shilpa Sangstha Limited". The validity of such bond must cover the period up to the commercial launching of services of the first system/node of all systems covered by this purchase or issuance of the first PAC of the system, whichever is later.

10.6.2 The performance security bond will be refundable after issuance of the first Provisional Acceptance Test Certificate (PAC) of all the systems covered by the contract or after the commercial launching of services of the first system/node of all systems covered by this purchase, whichever is later.

10.6.3 If the successful bidder does not submit the performance bond, it shall be deemed that, the bidder has given a negative answer to TSS 's request for signing of the contract.

10.6.4 Should the bidder fail to launch the commercial services of the first system/node, in time and way as described in the contract, TSS will be entitled to recover Tk. 1(one) million for each month or its part of such delay. In case, the total recoverable amount exceeds the amount of the performance security bond, TSS will reserve the right to terminate the contract and forfeit the total amount of the performance bond.

10.7 The bidder, after submission of the Performance Security Bond, shall be invited by TSS to start negotiation on different aspects of the contract and relevant BoQs.

10.8 The bidder shall start negotiation within 15(fifteen) days after issuance of such invitation. Efforts will be made by both the parties to complete negotiation within the shortest possible time.

10.9 If the bidder fails to start the negotiation within the stipulated time, it shall be concluded by TSS that, the bidder is not willing to sign the contract. In such a state, TSS will unilaterally cancel the letter of intent and start subsequent proceedings of its choice. In such case, TSS reserves the right to forfeit the bid money of the defaulting bidder.

10.10 The bidder will note that, if it has disagreed to or had proposed any alternate conditions to any or many clauses or sub-clauses of the proposed draft contract, such disagreement and/ or alternate proposals shall not be binding upon TSS until and unless amendment(s) to relevant clause(s) are agreed by TSS before signing of the contract.

10.11 After completion of the negotiation process, representatives of both the parties shall initial copies of the agreed contract.

10.12 TSS shall take steps for approval of the contract by relevant authorities.

10.13 After approval of the contract by TSS 's relevant authority, representatives of the bidder and TSS shall sign the final copies of the contract. At least 3(three) copies of the contract shall be signed in original; one of the copy shall be taken by the bidder and the other two shall be preserved by TSS.

CAPACITY REQUIREMENT OF OLT

Annex 1.1

	Required Capacity				Bidder's offer			
	GE interface	V5.2 interface	E1 for DDN	STM-4	GE interface	V5.2 interface	E1 for DDN	STM-4
Gulshan								
Dhaka Cantt								
Uttara								
Nilkhet								
Motijheel								
Mirpur								
Chakbazar								
Saidebad								
Rampura								

OLT Design Consideration :

1. The required capacity of different interface has to be determined on the basis of total interface required for all 3-8 ONU under that OLT
2. 0.10 erl for all POTS & ADSL lines
3. 1 E1 per G.SHDSL subscriber
4. 1 Mbps per ADSL subscriber
5. 5 Mbps per FE port

Annex 1.2

Type of ONU with capacity

Type	No of ONU	POTS with ADSL2+	FE	G.SHDSL	ISDN	STM
Type A	15	1000	12	4		STM-1
Type B	17	1500	12	4		STM-4
Type C	04	2000	12	4		STM-4

Total 36

1. Number of STM-4/STM-1 Interface requirement for each ONU has to be determined on the basis of following consideration
   - 1 E1 per G.SHDSL subscriber
   - 0.10 erlong for all POTS & ADSL lines
   - 1 Mbps per ADSL subscriber
   - 2 Mpbs per FE port
2. POTS with ADSL means both ADSL and Telephone facilities should be available each subscriber.

Annex 1.2(a)

Area and capacity of ONU

SI No	Exchange Name	Area of ONU	Type of ONU
1	Gulshan	1.Notunbazar Fire service,DESCO office,Badda Thana	
		2.Bashundhara Residential Area (A Block)	
		3.Baridhara U N Road (Beside No House 15)	
		4.Jamuna Future Park	
		5.Aftab Nagar	
		6.Middle Badda	
		7. Tejgaon Indistrial Area	
2	Dhaka Cantt	1.New DOHS Mohakhali	
		2.Kafrul and Ibrahimpur	
		3.Manikdi	
3	Uttara	1.Ashkona Hazi Camp	
		2.Khilkhet	
		3.Sector-5	
		4.Sector-7(Lake Drive Road)	
		5. Sector-12	
4	Nilkhet	1.68/3/B, Jhigatola, Dhaka	
		2.Azimpur Collony	
		3. BDR Gate No 1, Dhaka	
		4.Bangabandhu Sheikh Mujibur Rahman Medical University	
		5.Momotaj Plaza, Dhanmoni,Road No:04	
		6.Multiplan Centre, New Elephant Road	
5	Motijheel	1.Bangladesh Bank	
6	Mirpur	1.Tolar Bug, Mirpur	
		2.Gabtoli/Mazar Road, Mirpur	
7	Chakbazar	1.Babu Bazar	
		2.Midford Hospital	
		3.Lalbag Chowrasta, Sheikh Shah Bazar, Dhaka.	
8	Saidebad	1. Konapara	
9	Rampura	1. Mohammadbag, Near Rajarbag	
		2. Mahanagar Housing Society,Rampura(Near BTV)	

Annex 1.3

CAPACITY REQUIREMENT OF MDF PATCH PANEL

Site		Patch Panel capacity			
		Exchange side patch panel		Subscriber side patch panel	
		Requirement	Offered	Requirement	Offered
Type-A					
1	Nandan Kanon, Chittagong	1000		1000	
2	Central Sylhet,	1000		1000	
3	Central, Khulna	1000		1000	
4	Bogra	1000		1000	
5	Barisal	1000		1000	
6	Rajshahi	1000		1000	
7	Gazipur	1000		1000	
8	Savar	1000		1000	
9	Mymensingh	1000		1000	
10	Jessore	1000		1000	
Type-B					
11	Chawkbazar, Dhaka	1500		1500	
12	Comilla	1500		1500	
13	Sayedabad, Dhaka	1500		1500	
14	Fakirapool, Dhaka	1500		1500	
15	Narayangonj, Dhaka	1500		1500	
16	Khilgaon, Dhaka	1500		1500	
17	Cantonment, Dhaka	1500		1500	
Type-C					
18	Mirpur, Dhaka	3000		3000	
19	Nilkhet, Dhaka	3000		3000	
20	Agrabad, Chittagong	3000		3000	
Type-D					
21	Moghbazar, Dhaka	4000		4000	
22	SBN, Dhaka	4000		4000	
23	Central, Dhaka	4000		4000	
24	Uttrara, Dhaka	4000		4000	
25	Gulshan, Dhaka	4000		4000	
Total		49500		49500	

Annex -1.4

Capacity requirement of ODF

		Present equipped capacity	
		Requirement	Bidder's offer
Type-A			
1	Moghbazar, Dhaka	24	
2	SBN, Dhaka	24	
3	Chawkbazar, Dhaka	24	
3	Comilla	24	
5	Sayedabad, Dhaka	24	
6	Mirpur, Dhaka	24	
7	Narayangonj, Dhaka	24	
7	Khilgaon, Dhaka	24	
9	Cantonment, Dhaka	24	
10	Agrabad, Chittagong	24	
11	Nandan Kanon,Chittagong	24	
12	Central Sylhet,	24	
13	Central, Khulna	24	
14	Bogra	24	
15	Barisal	24	
16	Rajshahi	24	
17	Gazipur	24	
18	Savar	24	
19	Mymensingh	24	
20	Jessore	24	
Type-B			
21	Gulshan, Dhaka	48	
22	Central, Dhaka	48	
23	Fakirapool, Dhaka	48	
24	Secretariat, Dhaka	48	
25	Nilkhet, Dhaka	48	
26	Uttrara, Dhaka	48	

FORM A
SUMMARY PRICE OF THE BID

SI	Name of Item	Total price	
		USD Taka	+ BD
A	Total price for all equipment		
1	Total price for all OLT (from all Form B.1)		
2	Total price for all ONU (from all Form B.2)		
3	Total price for MDF & ODF (from all Form B.3s)		
4	Total price for all other equipment (from all Form B.4)		
5	Total price for all OSP equipment (from all Form B.5)		
	Total price for equipment(FoB/FCA)		
B	Total Freight (from all Bs)		
	Total price equipment (C&F)		
x.	Total price for equipment (C&F)		
D.	Total price for services		
1	Total price for services of OLT (from all Form B.1)		
2	Total price for services of ONU (from all Form B.2)		
3	Total price for services of ODF & MDF (from all Form B.3)		
4	Total price for services of other equipment (from all Form B.4s)		
5	Total price for OSP services (from all Form B.5)		
Y.	Total price for Service		
	Total price for the bid (X+Y)		
In Words: US Dollar……plus BD Taka……. ……..only			

Form B.1

SUMMARY PRICE FOR OLT EQUIPMENT
(The Bidder shall fill up one form for each OLT site)

Sl	Name of Item	Total Price	
		USD + BD Taka	
A	Total Price for Equipment (FoB/ FCA)		
B	Total Freight		
	Total Price for Equipment (C&F)		
C	Total Insurance		
X.	Total Price for Equipment (CIF)		
D	Total Price for Services		
01.	Total Price for Installation Services		
02.	Total Price for Testing/Commissioning Services		
Y.	Total Price for Services		
	Total Price for the OLT Equipment		

In Words : US Dollar .....
and BD Taka .... only.

Form B.2

SUMMARY PRICE FOR ONU EQUIPMENT

Type of ONU:

(The Bidder shall fill up one form for each type of ONU)

Sl	Name of Item	Total Price USD + BD Taka	
A	Total Price for Equipment (FoB/ FCA)		
B	Total Freight		
	Total Price for Equipment (C&F)		
C	Total Insurance		
X.	Total Price for Equipment (CIF)		
D	Total Price for Services		
01.	Total Price for Installation Services		
02.	Total Price for Testing/Commissioning Services		
Y.	Total Price for Services		
	Total Price for the ONU (X+Y)		

In Words : US Dollar .....

and BD Taka .... only.

Form B.3

SUMMARY PRICE FOR MDF

Type of the site : .....

(The Bidder shall fill up one form for each Type of MDF)

Sl	Name of Item	Total Price	
		USD + BD Taka	
A	Price of Equipment		
	Price of MDF		
	Total Price for Equipment (FoB/ FCA)		
B	Total Freight		
	Total Price for Equipment (C&F)		
C	Total Insurance		
X.	Total Price for Equipment (CIF)		
D	Total Price for Services		
01.	Total Price for Installation Services		
02.	Total Price for Testing/Commissioning Services		
Y.	Total Price for Services		
	Total Price for MDF (X+Y)		

In Words : US Dollar .....

and BD Taka .... only.

Form B.4

SUMMARY PRICE FOR ODF

Name of the site : .....

(The Bidder shall fill up one form for each Type of ODF)

Sl	Name of Item	Total Price USD + BD Taka	
A	Price of Equipment		
	Price of ODF		
	Total Price for Equipment (FoB/ FCA)		
B	Total Freight		
	Total Price for Equipment (C&F)		
C	Total Insurance		
X.	Total Price for Equipment (CIF)		
D	Total Price for Services		
01.	Total Price for Installation Services		
02.	Total Price for Testing/Commissioning Services		
Y.	Total Price for Services		
	Total Price for ODF (X+Y)		

In Words : US Dollar .....

and BD Taka .... only.

Form B.5

SUMMARY PRICE FOR OTHER EQUIPMENT

Sl	Name of Item	Total Price USD + BD Taka	
A	Price for Related Equipment		
01.	Price for Network Maintenance System (NMS)		
02.	Price of any other item, if any		
	Sub - Total A		
B	Price for Maintenance Spares for Buffer Stock (From Form D)		
	Total Price for Other Equipment (A+B)		
C	Total Freight		
	Total Price for Equipment (C&F)		
D	Total Insurance		
	Total Price for Equipment (CIF) A+B+C+D		

Form B.6

SUMMARY PRICE FOR OTHER SERVICES

Sl	Name of Item	Total Price	
		USD + BD	Taka
A	Total Price for Other Services related to Equipment		
01.	Network Maintenance System (NMS)		
02.	Other Service, if any		
	Sub-Total for A		
B	Other services related to the whole system		
01	Maintenance Support up to Performance Guarantee Period		
02	Price for Performance Guarantee Period		
03	CPOC		
04	Local Training		
05	Total Price for Provisional Acceptance Test		
06	Total Price for Final Acceptance Test		
	Sub - Total for B		
C	Total Price for Other Services related to Turn-Key completion of the Project		
01.	Total Price for 7 years maintenance service after FAT		
02.	Total Price for Inter-working/Connection Services		
	Sub - Total for C		
	Total for Other Services (A + B+C)		

Form B.7
SUMMARY PRICE FOR OSP

Sl. No.	Name of Items Unit	Level	Quantity	Total Cost FOB	
				USD (FOB)	BDT
	Out Side Plant				
1.	**Material Supply**				
1.1	**Material – OF Cable**				
1	Optical Fibre Cable (24 fibre) in-station.	Meter	1000		
2	Optical Fibre Cable (24fibre) for duct and Direct buried installation.	Meter	120000		
3	Spares for OF Cable (24 fibre) for duct and direct buried installation	Meter	10000		
	Sub-Total				
1.2	**Material – Pipe and Accessories**				
1	1x40/33 mm (wall thickness 3.5 mm) HDPE Duct/Sub-duct with permanent solid Lubrication inside	Meter	25000		
3	110 mm (outer dia) and 3.2 mm (wall Thickness PVC Duct (in Taka)	Meter	60000		
4	100mm (Inner Dia.) and 3 mm (wall Thickness) perforated GI Pipe. (in Taka)	Meter	200		
5	Push Fit HDPE Pipe Coupler.	Pc	50		
6	GI-PVC Coupler.(in Taka)	Pc	50		
	Sub-Total				
1.3	**Material - Manhole Accessories**				
1	Manhole Cover & Frame	Pc	5		
2	Sump Pit Cover	Pc	5		
3	Manhole Ladder. (in Taka)	Pc	5		
4	Pulling Hook (Pulling in iron) (in Taka)	Pc	20		
5	Bell Mouth. (in Taka)	Pc	40		
6	Rubber End Cap (with and w/o hole) (in Taka)	Pc	40		
7	Hook-Bolt and Nut (6 nos per set) (in Taka)	Set	100		
8	Cable Rack and Bracket (3 vertical and 3 horizontal part per Set) (in Taka)	Set	10		
	Sub-Total				
1.4	**Material - Handhole Accessories**				
1	Concrete Post. (in Taka)	Pc	10		
2	Bell Mouth (in Taka)	Pc	10		
3	Rubber End Cap (with and w/o hole) (in Taka)	Pc	10		
	Sub-Total				
1.5	**Material – Other Accessories**				
1	Warning Tape 5 cm X 0.15 mm	Meter	10000		
2	Marker Tag	Pc	20		

Sl. No.	Name of Items Unit	Level	Quantity	Total Cost FOB	
				USD (FOB)	BDT
			Sub-Total		
1.6	**Material – Consumables during Installation**				
1	Drawing Rope (Nylon) (in Taka)	Meter	10000		
1.7	**Material - OF Jointing and Termination Kits**				
1	24 fiber Optical joint closures equipped with required splice tray, splice protector.	Each	10		
2	Spare 24 fiber Optical joint closure equipped with required splice tray, splice protector.		10		
3	Optical Fiber Distribution / Termination box equipped with 18 Pigtail (3 m), 18 U-Link, 18 Patch cord (5 m) along with necessary splice tray and splice protector	Each	12		
4	Spare Pigtail (3 m)	Each	100		
5	Spare Patchcord (5 m)	Each	100		
6	Spare Patchcord (10 m)	Each	100		
			Sub-Total		
			A. Total of Materials		
2.	**Services (in Taka)**				
2.1	**Service – Duct Installation**				
1 4	way 110mm PVC Duct Installation 1.2 ± 0.1 m deep Trenching, Laying of 4 nos of 110mm dia PVC Pipes with necessary Spacer at each 2 m with 10 cm Sand bed below and above the Pipes, Installation of Cement Concrete Slab protection (50cm x 30cm x 5cm), Warning Tape (5 cm X 0.15 mm) and back filled with excavated soil and compaction. (Price includes supply of all construction material, slab, sand and breaking of any surface).	Meter	5000		
2 2	way 110mm PVC Duct Installation 1.2 ± 0.1 m deep Trenching, Laying of 4 nos of 110mm dia PVC Pipes with necessary Spacer at each 2 m with 10 cm Sand bed below and above the Pipes, Installation of Cement Concrete Slab protection (50cm x 30cm x 5cm), Warning Tape (5 cm X 0.15 mm) and back filled with excavated soil and compaction. (Price includes supply of all construction material, slab, sand and breaking of any surface).	Meter	20000		
4 1	way GI Pipe Duct at Bridge and Culvert **Crossing** Perforation of 4" (Inner Die), 3 mm (Thickness) GI Pipe and Installation of 1 no GI pipe along bridge and Culvert using Galvanised clamps at each 1 m distance and bending of pipes up to 1.2	Meter	50		

Sl. No.	Name of Items Unit	Level	Quantity	Total Cost FOB	
				USD (FOB)	BDT
	± 0.1 m depth from ground level and termination with GI-PVC coupler.				
5	1 WAY Rail boring Boring of Railway line and Installation of 1x4" (Inner Dia), 3 mm (Thickness) GI Pipe 1.2 ± 0.1 m depth from ground level and termination with GI-PVC coupler.	Meter	10		
2.2	**Service – Other Duct and Cable related Installation work**				
1	HDPE Sub-Duct installation in Main PVC / **GI Duct** Installation of 1 no of 40/33 mm HDPE sub-duct in one PVC / GI duct all through the route	Meter	45000		
2	HDPE Sub-Duct installation in partially **filled primary PVC / GI Duct** Installation of 1 no. of 40/33 mm HDPE sub-duct in one partially filled primary PVC / GI duct.	Meter	65000		
3	HDPE Sub-Duct installation Direct Burried Installation of 1 no. of 40/33 mm HDPE sub-duct in one partially filled primary PVC / GI duct.	Meter	10000		
3	FO Cable installation in HDPE Duct/Sub-**duct** **Installation of 18 Fiber Cable in HDPE New/Old Duct/Sub-duct all through the route (i.e. 4way PVC, 4 way GI, 2 way HDPE, 1 way GI and 1 way HDPE duct area.**	Meter	120000		
4	In Station FO Cable installation (Through **New Cable Tray)** Installation of 12/18/24 Fiber In Station Cable providing 300 mm cable tray with necessary fitting and fixing.	Meter	200		
5.	In Station FO Cable installation (Through **Existing Cable Tray)** Installation of 12/18/24 Fiber In Station Cable using existing Cable tray providing necessary fitting and fixing.	Meter	200		
2.3	**Service – Manhole and Handhole related Installation work**				
1 S-2	Type Manhole Excavations, Construction of S-2 Type Manholes complete with all civil construction materials. Manhole sides and necessary back filling with excavated soil. Including neck making, fixing of Hardware (i.e. cable rack,	Each	5		

Sl. No.	Name of Items Unit	Level	Quantity	Total Cost FOB	
				USD (FOB)	BDT
	bracket, Ladder, sum pit cover, pulling in iron, Bell mouth, marker tag and fixing of cover).				
2	Construction of reinforced Concrete Hand Holes Excavation and Construction of reinforced concrete handhole complete with all civil construction materials including fixing of Bellmouth, Marker tag, and concrete post. Handhole sides and necessary back filling with excavated soil. Price includes handhole cover (4 Piece cover construction) and will be constructed and placed 0.5m below surface	Each	10		
2.4	**Service – Jointing and Termination**				
1	Jointing of 24 Fiber Cable **Cutting, Cleaning, Preparing and Splicing/jointing of 18 Fiber cable in Joint Closure and proper placing the Joint closure inside Manhole / Handhole**	Each	28		
2	Fiber Termination of 24 Fiber Cable **Cutting, Cleaning, Preparing and Termination of existing 18 Fiber cable in Fiber Termination Box.**	Each	28		
			B. Total of Services		
			Grand Total (A+B)		

Form C.1

Detail BoQ for OLT

(The Bidder shall fill up one form for each site)

Sl	Name of Item Quantity		Unit Price			Total Price		
			USD	+	BD Taka	USD	+	BD Taka
A	Price for OLT Equipment							
	The Bidder shall show the detail BoQ as per his *choice and shall satisfy all requirements specified in this tender document*							
	Sub-Total for OLT Equipment							
B	Price for Services							
01	Installation Services							
02	Testing/Commissioning Services							
	Sub - Total for Services							
	Total for OLT System A+B							

Form C.2

Detail BoQ for ONU

(The Bidder shall fill up one form for each type of ONU)

Sl	Name of Item Quantity		Unit Price			Total Price		
			USD	+	BD Taka	USD	+	BD Taka
A	Price for ONU Equipment							
	The Bidder shall show the detail BoQ as per his *choice and shall satisfy all requirements specified in this tender document*							
	Sub-Total for ONU Equipment							
B	Price for Services							
01	Installation Services							
02	Testing/Commissioning Services							
	Sub - Total for Services							
	Total for ONU System A+B							

Form C.3

Detail BoQ for MDF

(The Bidder shall fill up one form for each type of MDF)

Sl	Name of Item Quantity		Unit Price			Total Price		
			USD	+	BD Taka	USD	+	BD Taka
A	Price for MDF Equipment							
	The Bidder shall show detail BOQ as per his choice and shall *satisfy all requirements specified in the tender document*							
	Sub-Total for MDF Equipment							
B	Price for Services							
01	Installation Services							
02	Testing/Commissioning Services							
	Sub - Total for Services							
	Total for MDF System A+B							

Form C.4

Detail BoQ for ODF

(The Bidder shall fill up one form for each type of ODF)

Sl	Name of Item Quantity		Unit Price			Total Price		
			USD	+	BD Taka	USD	+	BD Taka
A	Price for ODF Equipment							
	The Bidder shall show the detail BoQ as per his *choice and shall satisfy all requirements specified in this tender document*							
	Sub-Total for ODF Equipment							
B	Price for Services							
01	Installation Services							
02	Testing/Commissioning Services							
	Sub - Total for Services							
	Total for ODF System A+B							

Form C.5

DETAIL BOQ FOR OTHER EQUIPMENT

Sl	Name of Item Quantity		Unit Price			Total Price		
			USD	+	BD Taka	USD	+	BD Taka
A	Price for Network Maintenance System (NMS)							
	The Bidder shall show the detail BoQ as per his *choice and shall satisfy all requirements specified in this tnder document*							
	Sub - Total for NMS							
B	200 km 0.4 mm tip cable							
C	Price for Other Equipment not mentioned in any Form but necessary for proper implementation of the work							
	The Bidder shall show the detail BoQ as per his *choice and shall satisfy all requirements specified in this tender document*							
	Sub - Total for Other Equipment							
	Total for other Equipment							

Form C.6

DETAIL BOQ FOR OTHER SERVICES

Sl	Name of Item Quantity		Unit Price			Total Price		
			USD	+	BD Taka	USD	+	BD Taka
A	**Other Services related to specific Equipment**							
	The Bidder shall show the detail BoQ as per *his choice and shall satisfy all requirements specified in this tender document*							
01	Network Maintenance System (NMS)							
	Sub-Total for A							
B	**Other services related to the whole system**							
	The Bidder shall show the detail BoQ as per *his choice and shall satisfy all requirements specified in this tender document*							
01	Maintenance Support up to Performance Guarantee Period							
02	Price for Performance Guarantee Period							
03	Local Training							
04	Total Price for Provisional Acceptance Test							
05	Total Price for Final Acceptance Test							
06								
07								
	Sub - Total for B							
C	**Other Services related to Turn-Key completion of the Project**							
	The Bidder shall show the detail BoQ as per *his choice and shall satisfy all requirements sp ecified in this tender document*							
01	Total price for seven years maintenance service after FAT							
02	Total Price for Inter-working/Connection Services							
	Sub - Total for C							
	Total for Other Services (A + B+C)							

Form D

DETAIL BOQ FOR MAINTENANCE SPARES FOR BUFFER STOCK

Sl	Name of Item Quantity		Unit Price			Total Price		
			USD	+	BD Taka	USD	+	BD Taka
	The Bidder shall show the detail BoQ as per his choice *and shall satisfy all requirements specified in this tender document*							
	Total for Maintenance Spares for Buffer Stock							

Form E

QUOTATION FOR FUTURE ORDER

(a) Future Order Formula for Equipment:

(b) Future Order Formula for Service:

Form F

SUMMARY OF THE BID EQUIPMENT

Sl	Name of Item	Model Number & Name	Manufac-turer's Name	Manufac-turer's Address	Country of Origin
A	Main Equipment				
a	OLT				
b	ONU				
c	Optical Fiber cables				
d	MDF Patch panel				
e	ODF				

B Network Maintenance System (NMS)

a Server
b Software