

**REGISTERED**

---

---

---

---

**Sub: Notice inviting quotation for purchase of items for fiber connectivity.**

This Institute intends to purchase different equipment as per specifications notified in “**Annexure – A**”. Please send your quotation to the undersigned in a sealed cover duly super scribed on envelop “Quotation for supply of items for fiber connectivity in hostels” so as to reach latest by closing date/time i.e. 20.02.15 up to 4.00 P.M.

**The Terms & Conditions are as under:-**

- 1) It may be noted that quotation will be sent through registered/speed post only. The institute is located in a remote area and it takes 5 to 7 days to reach the mail, therefore, quotation be dispatched well in time to avoid any sort of delay.
- 2) Rate of ST/VAT if extra must be mentioned clearly.
- 3) The other terms & conditions for submitting the quotation are given overleaf which must be read carefully before submitting the quotation.
- 4) Quotation other than those addressed will not be entertained.
- 5) The Prices quoted must be FOR SLIET, Longowal.
- 6) Quotations received later than 4.00 PM on due date are liable to be ignored.
- 7) Quotation must be sent on the letter head of the party.
- 8) As per instructions if purpose of quotation is not super scribed and quotation is opened by mistake then it may be rejected.


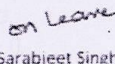

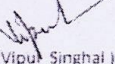

F. I/c (Purchase)

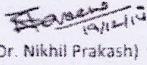
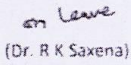
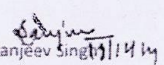
**TERMS & CONDITIONS FOR QUOTATION**

<b>DELIVERY</b>	The rate quoted must preferably be free delivery/F.O.R. Longowal after allowing the discount, if any. Where quoted extra ad-valorem rate payable, it should be clearly indicated. Supply should be made within the specified delivery period.
<b>TERMS OF PAYMENT</b>	Our normal terms of payment is within 30 days after receipt of stores in good condition by means of cheque/draft/RTGS
<b>TAXES</b>	No sales tax concession against Form C and 'D' is admissible to this Institute. However, 'Form E' certificate being an educational institute can be issued if sales tax concession is admissible.
<b>EXEMPTIONS</b>	Excise and customs duties are exempted to the institute. The relevant exemption certificate will be issued to the successful bidder only if the excise duty/custom duty is exclusively mentioned in the Quotation. In case the offered items are to be imported, the rates should be quoted in foreign currency on FOB basis. Basic duty as applicable under notification No. 51/96 customs dated 23.07.1996 as applicable shall be borne by the institute. If the price quoted is in foreign currency then payment shall be made through letter of credit against submission of B.G. of Min. 25% value of supply order, if the order value is more than US\$ 10,000 or through Telegraphic Transfer (TT) if the order value is less than US\$ 10,000 through Nationalized banks. The bank charges outside India should be borne by the Beneficiary. Clearance at customs will be arranged by us but you will assist our clearance agent. In case of indigenous item the price must be quoted in Indian Rupees and 100% payment will be made only after successful installation, testing and commissioning of equipment. <b>No advance payment will be made.</b>
<b>DIRECTOR'S RIGHTS</b>	Director, SLIET, reserves the rights of acceptance or rejection of any or all quotations. The discretion for increasing or decreasing of the quantities also rests with him. SLIET also not bind itself to accept does the lowest price. In case of any dispute, the decision of Director SLIET will be final & binding.
<b>VALIDITY OF QUOTATIONS</b>	Quotations will be considered valid for 03 months from the date of quotation
<b>CORRESPONDENCE</b>	No correspondence regarding acceptance/rejection of a quotation will be entertained.
<b>SAMPLE/BRAND/MAKE/WEIGHT</b>	Sample where asked for, will invariably be made available and sent along with the quotations. However, Brand/Make/Weight etc. must be mentioned clearly in the quotations. Technical literature/pamphlet should also be enclosed.
<b>REJECTION</b>	Quotation not confirming to the set procedure as above will be rejected.
<b>DISCOUNT/REBATES</b>	A special discount/rebate wherever admissible keeping in view that the supplies are being made for education purpose in respect of Public Institution of national importance may please be indicated.
	Conditional, telegraphic quotation shall be rejected out rightly.
	SLIET shall not be held responsible for any postal delay in sending or late receipt of quotation.
	Quotation should be free from corrections & erasures.
	<b>Faculty I/c (Purchase)</b>

4 Annexure - A

S No	Description	Make	Qty	Units
1	Armored Optical fibre Cable (SM 6 Core)	Digilink/ Molex/AMP	1500	Mtrs
2	Optical fibre Cable (SM 12 Core)	Digilink/ Molex/AMP	500	Mtrs
3	Armored Optical Fibre pgtail/connector SC type (1 Meter)	Digilink/ Molex/AMP	85	Nos
4	Optical Fibre Patch Cord ST to LC (SM 3 Mtrs)	Digilink/ Molex/AMP	15	Nos
5	LIU 24 Ports with all accessories loaded Wall Mount Type	Digilink/ Molex/AMP	1	No
6	LIU 12 Ports with Couples & all accessories RackMount Type	Digilink/ Molex/AMP	2	Nos
7	LIU 12 Ports with Couples & all accessories Wall Mount Type	Digilink/ Molex/AMP	8	Nos
8	Supply of 32 mm HDPE Pipe	ISI mark	1500	Mtrs
9	Supply of 40 mm HDPE Pipe	ISI mark	500	Mtrs
10	Route Marker		10	No
Labour Charge				
1	Laying of Fibre Cable		2000	
2	Laying of HDPE Pipe in Trench		1600	
3	Laying of HDPE Pipe in Wall		300	
4	Digging of soil and Back Filling		1200	
5	Fixing of LIU		11	
6	Splicing of Pigtailed with OFC		85	
7	Fixing of Rout Marker		10	

 (Sanjeev Prakash)    
  on leave (Sarabjeet Singh)    
  (Dr. S K Tripathi)    
  on leave (Vipul Singh)    
  (Pankaj)

 (Dr. Nikhil Prakash)    
  on leave (Dr. R K Saxena)    
  (Dr. Sanjeev Singh)

**List of parties from whom NIQ may be called for purchase of items for providing fiber connectivity in newly constructed hostels.**

- 1) Alsun Systems  
101-102, Skyline House,  
85, Nehru Place, New Delhi-110019
- 2) Artek Systems  
Vishal Building, Flat #3, Gr. Floor,  
Dr. Braganza Pereira Road,  
St. Inez, Panaji, Goa 403 001
- 3) Utics Technologies  
Near Main Post Office  
Court Road, Sangrur ,  
Sangrur - 148001
- 4) Onkar Computer Services  
Computer Repair Service • Badheri  
SCO 41, 2nd Floor, Badheri,  
Sector 41 D, Chandigarh, 160036
- 5) Pace Infosys PVT LTD  
Sco-73, Sector 20c,  
Chandigarh - 160020
- 6) Data Spec  
Software Company  
S.C.O. 2453, F2, Sector 22c,  
Chandigarh, 160022
- 7) Wipro Limited (Infotech Division)  
Plot no. 480-481, Phase – III,  
Udyog Vihar, Gurgaon – 122016
- 8) HCL Technologies Limited  
A- 104, Sector – 58  
Noida
- 9) OST Electronics Pvt. Ltd.,  
SCO 212, Sector 36-D,  
Chandigarh 160036.
- 10) Qi Network Enterprise Pvt. Ltd.,  
430-431, Somdutt Chamber – II,  
9, Bhikaji Cama Place,  
New Delhi- 110066.
- 11) Schneider Electric India Private Limited,  
9<sup>th</sup> Floor, DLF Building No. 10,  
Tower C, DLF Cyber City,  
Phase II, Gurgaon -122002.
- 12) Molex (India) Private Limited  
Suite No. 10, 5<sup>th</sup> Floor,  
Paharpur Business Centre,  
21, Nehru Place Greens,  
New Delhi - 110019

**Subject: Proposal for providing fibre connectivity to newly constructed Hostels**

**JOB DESCRIPTION**

SLIET Longowal has existing optical multimode fibre cable infrastructure in all academic building and Hostels except three newly constructed Hostels & PG(girls) Hostel. To connect these hostels through LAN, an approximately 2000 meters single mode optical fibre cable is to be laid.

**Armored optical fiber cable (water protected, 6/12 core, single mode) will be supplied and laid by the party**

SLIET is inviting quotation for Optical fiber laying between Computer Block to Boys Hostel no. 9 & 10, from GH1 to GH3, from front block to central block of BH3 & Bh4. The party should have pool of experienced persons, who are deputed at site, should be capable of taking up the job without need of any sort of training.

**1. Excavation and Backfilling for Open Cut Trenching**

The Contractor shall carry out excavation and backfilling of trenches in all kinds of soil strata such as soil (Soil means normal soil, soil with pebbles, soft rock), concrete/bitumen road for laying Pre-lubricated high-density polyethylene plastic pipe (PLB HDPE Pipe). The Contractor shall also make suitable arrangements for laying PLB HDPE pipes. (If Contractor requires a GI pipes at the roads crossing, it may be included in the quote)

**a. Excavation**

The cable trenches shall be dug as per route plan and detail trench drawings (indicating various dimensions and other details of the trench) approved by the purchase finalizing committee of SLIET. The Contractor shall take due care and precaution during excavation to avoid possible damage of other underground plants/facilities in the proposed underground fiber optic cable route and shall indemnify the Owner/Employer for all damages and shall be solely responsible for all the damages and losses.

Depth of trench shall be at least **750 mm** in soil. However, for road crossings/Concreted area the trench depth shall be at least **500 mm**. The width of trench at the top and bottom shall be adequate for proper installation of PLB HDPE pipes,(GI pipes if required), Warning Brick etc. as per requirement. The trench depth shall be measured from the bottom of the trench. Trench shall be located at the lowest point of lower area if possible. Trench shall preferably be constructed along the roadsides not through field boundary or field crossing. In case of uneven ground, the Contractor must ensure that the bottom of the trench is not uneven, the Contractor shall maintain minimum depth of the trench as per specifications and may increase the depth at some locations, if required and provide a suitable gradient in the trench.

The Contractor shall also be responsible for supporting the exposed plant/facilities of other utilities such as water, electric, telephone or fiber optic cables etc to avoid any possible damage. The Contractor shall also be responsible for any dewatering of the trench during digging and installation of pipes.

For the purpose of this specification, soil types are defined below:

Soil All type of soil {i.e. dry, wet } including pebbles

*Signature*

shall  
for

Road All type of Road including RCC, Bitumen

#### **b. Backfilling**

After installation of PLB HDPE pipes, the backfilling of the trench shall be done. **The PLB HDPE pipes shall be sandwiched with sand.** Backfilling shall normally be done with the excavated soil, unless it consists of large boulders/stone in which case the boulders/stone shall have to be broken to a maximum size of 80mm. The backfilling should be clean and free from organic matter or other foreign material. The earth filling is done with a suitable amount to allow for any shrinking of soil at the later date. In case of regular footpath, temporary reinstatement shall be done after backfilling. The left out earth if any has to be disposed by the Contractor to a suitable location as indicated by SLIET authorities at his own cost. It is advisable to start backfilling of the trench from one end or after padding of the pipe to avoid uplifting. The backfilling of the remaining portion shall be done as stipulated for normal soil.

#### **c. Warning Brick**

Bricks (non-modular) class designation-5(50) of the actual size 225 mm (Length) x 111 mm (Width) x 70 mm (Thick) shall be laid immediately above and sides of the sand layer in which PLB HDPE pipe is installed. Brick of size other than above may also be used. Warning bricks shall be used throughout the length (except road crossing and concreted.)

### **2. Installation of PLB HDPE Pipe**

One PLB HDPE pipe shall be laid at bottom of the trench after making the surface smooth and providing 50 mm of sieved, stone free sand bedding. After laying the pipe additional sieved sand shall be added to increase the height of the sand layer to a total of 250 mm hence positioning the PLB HDPE pipe in the middle of the layer. Other important steps are described as under:

- a. PLB HDPE Pipe shall be laid in a flat bottom trench free from stones, sharp edged debris.
- b. The Pipe shall be placed in trenches as straight as possible. Minimum bending radius of pipe and fiber optic cable shall always be taken into account.
- c. The ends of pipes shall always be closed with end plugs to avoid ingress of mud, water or dust i.e. all pipe opening shall be sealed to avoid entry of foreign material.
- d. The pipes shall be joined tightly & properly through plastic couplers and the joint shall be smooth and free from steps. The joints shall be made properly. All joints shall be assembled with proper tools only.
- e. Coupler shall not be placed along the bend portion of the pipe
- f. PLB HDPE pipes shall be installed in a manner that fiber optic cable can be pulled without damaging the fiber optic cable due to stresses.

All Conduit and joints shall be inspected by the committee before carrying out the backfilling. Joints shall be visually inspected and checked for tightness.

### **3. Reinstatement**

Reinstatement of the all the excavated area to restore the excavated area to original quality and shape is included in the scope of this job. Temporary reinstatement of footpath, Bitumen Road, concreted area stipulated in this section



shall be carried out as a part of backfilling. The Contractor shall be responsible for carrying out reinstatement work irrespective of area or type as mentioned above. The Final reinstatement of Bitumen road and concreted area is not in the scope of this tender.

#### 4. Bill of Material

S.No.	Descriptions	Make	Qty	Units
1	Armored Optical fibre Cable (SM 6 Core)	Digilink/ Molex/AMP	1500	Mtrs
2	Optical fibre Cable (SM 12 Core)	Digilink/ Molex/AMP	500	Mtrs
3	Armored Optical Fibre pigtail/connector SC type (1 Meter)	Digilink/ Molex/AMP	85	Nos.
4	Optical Fibre Patch Cord SC to LC (SM 3 Mtrs)	Digilink/ Molex/AMP	15	Nos
5	LIU 24 Ports with all accessories loaded Wall Mount Type	Digilink/ Molex/AMP	1	No.
6	LIU 12 Ports with Couplers & all accessories RackMount Type	Digilink/ Molex/AMP	2	Nos
7	LIU 12 Ports with Couplers & all accessories Wall Mount Type	Digilink/ Molex/AMP	8	Nos
8	Supply of 32 mm HDPE Pipe	ISI mark	1500	Mtrs
9	Supply of 40 mm HDPE Pipe	ISI mark	500	Mtrs
10	Route Marker		10	Nos.
Installation Charge				
1	Laying of Fibre Cable		2000	Mtrs
2	Laying of HDPE Pipe in Trench		1600	Mtrs
3	Laying of HDPE Pipe in Wall		300	Mtrs
4	Digging of soil and Back Filling		1200	Mtrs
5	Fixing of LIU		11	Nos.
6	Splicing of Pigtails with OFC		85	Nos.
7	Fixing of Rout Marker		10	Nos.

**Note: Quantities mentioned above are tentative, it may be decreased or increased at the time of deployment. The supplier will raise the bill as per actual.**

*Signature*

### Technical Specifications of HDPE Pipe

The HDPE pipe shall conform to the following standard and the technical specifications described in TEC-spec no. GR/CDS-08/02/NOV-04(including all amendments)-HDPE pipe for use as duct for optical fiber cable.

<b>Technical Specification of Armored Optical Fibre Cable(Single Mode 6/12 Core)</b>	
Outer sheath	HDPE
Central strength member	Fibre Reinforcement Plastic (FRP) OR two steel wires
Fibre / tube identification	Multiple tubes for 12 core Single tube for 6 core.
fibre protection (tubes)	Polybutylene Terephthalate (PBT)
Water blocking	Thixotropic gel (Tube); Petroleum jelly(Interstices)
Core wrapping	Polyethylene Terephthalate
Armouring	Corrugated steel tape armor (ECCS tape) of thickness > 0.15mm
Sheath / jacket	HDPE (UV stabilised)
Standards	ISO.IEC 11801 (2nd Edition), ITU-T REC G 652 D spec for low/zero water peak fibre; support for >40Gbps data rates, IEC 60793/60794-1 GR 20 STDS, TIA/EIA 568-C.3, EIA 455
Max tensile strength	> 2500 N (long term), >3500 N (short term)
Crush resistance	> 4400 N / 10 cm
Fibre core diameter (µm)	9
Fibre cladding diameter (µm)	125
Maximum attenuation (db/km) ) 1310/1550nm	<= 0.35 / 0.22
Cladding non circularity	< 1.0 %
Core non circularity	< 6.0 %
Core-cladding Concentricity error	
Proof stress level	> 0.7 (~1%) GPa
Strip force (peak)	1.0 < F peak strip < 8.9
Zero dispersion wavelength	1310 -8/+12 nm
Zero dispersion slope	> 0.091 ps/(nm <sup>2</sup> .km)
Fibre curl	> 4 m-radius of curvature
Cut-off wavelength	< 1260 nm
Mode field diameter at 1310	Nominal: 8.6 - 9.5 µm, Tolerance ± 0.7 µm
Mode field diameter at 1550	Nominal: 9.6 - 10.5 µm, Tolerance ± 0.7 µm
RoHS Compliant	Restriction on the Use of Hazardous Substances

### Dimension of pipe

The nominal size of the pipe shall be 32mm/40mm and shall meet the following requirements.

- (i) Outside diameter 32mm + 0.3mm, 40 mm + 0.4 mm
- (ii) Wall thickness 3.0 mm (±0.2 mm), 3.5(±0.2 mm)
- (iii) Standard length 500 meters ± 50 meter
- (iv) Thickness of permanent lubricant 10% of Pipe Thickness

*Signature*