Sub: Partner required for “Supply and Laying of Submarine Optical fiber cable in coastal area of Odisha, India”.

TCIL intends to participate in above mentioned tender.

TCIL invites Expression of Interest (EOI) for pre-tender tie-up from reputed organization/ company for supply and Laying of Submarine Optical fiber cable in coastal area of Odisha, India”.

A. Pre-qualification Criteria:

1. The bidder should be an entity registered under Indian law.
2. The bidder should have valid GST, PAN and TAN in India.
3. The bidder firm should not be defaulted/ black listed/banned by any state or Central Govt. agency of India.
4. The bidder should have the minimum financial resources to execute the order. The bidder should be profitable with positive net worth for last 3 financial years ending 31.03.2017.
5. Technical Capabilities: Should have the facilities that can be scheduled to meet the time frames, services and varieties as per the Scope of work enclosed.
6. Manufacturing Facilities: Availability of Infrastructure required to carry out the activity.
7. Management Capabilities:
   • Availability of Quality management System, Quality Control System etc.
   • Compliance of Delivery schedule
8. Similar Experience: The firm should have experience of having successfully completed similar projects earlier. Vendor should produce documents for proof of same.
   Note: Similar means vendor should have experience of laying at least 10 km undersea Submarine cables.
9. The bidder can either bid individually or in partnership. In case of partnership, an consortium agreement / MoU should be attached clearly defining the responsibility of each partner.
10. The consortium agreement must be submitted clearly identifying the “Lead Partner”. This authorization shall be evidenced by submitting with the bid a Power of Attorney signed by legally authorized signatories of all the partners.
11. Each consortium partner shall be jointly and severally responsible for completing the task as per the contract. TCIL, in any case, will deal with the lead partner, who shall be responsible for execution of work and shall be entitled to receive payments as per payment terms. TCIL shall sign an MoU with all the partners.
12. The bidder should submit a Authorization Letter in the name of Authorized Signatory for signing of Expression of Interest.
13. The bidder must be Original submarine OFC manufacturer or authorized agent/ supplier of the equipments or it shall arrange the Original submarine OFC manufacturer in name of TCIL.
14. The bidder shall submit compliance to technical specifications as per Annexure 2 along with product data sheets.
15. The bidder should submit an EMD of Rs. 5 lacs (Rupee Five Lacs only) (refundable) in the form of Demand Draft (DD) /Bank Guarantee (BG) in favour of Telecommunications Consultants India Limited” payable at New Delhi. EMD is to remain valid for a period of sixty days beyond the final bid validity period. EMD will be refunded to unsuccessful bidders within 30 (Thirty) days of completion of selection process.
16. The bidder should agree to abide by all the technical, commercial & financial of the tender on back to back basis except pricing, termination & risk purchase rights of the TCIL. TCIL shall release payment to selected bidder after the receipt of corresponding payment by TCIL. If selected bidder fails to execute its portion of work, then the same shall be executed by TCIL through third party or departmentally at the risk and cost of selected bidder.

17. The selected bidder shall have to sign MOU/ agreement, Integrity Pact & non disclosure agreements with TCIL.

18. All disputes or differences whatsoever arising among the parties under and/or in connection with and/or in respect of this MOU shall be referred to and decided by sole arbitrator, who shall be appointed by the CMD, TCIL. The arbitration shall be conducted in accordance with the Arbitration and Conciliation Act 1996 and the venue of the arbitration shall be in New Delhi.

B. Scope of Work:

1. Introduction
It is required to supply and lay fiber optic submarine cable between two locations (Mainland and Island) separated geographically by 16 kilometers distance approximately. The cable system will be repeater less i.e. no electronics shall be used along the route. Also there shall not be any splices/joints in between and the cable has to be supplied as a single piece.

2. Scope of Project
a. Marine survey of the area and design of cable Route
The firm has to undertake marine survey of the area and design the proper cable route as elaborated below. The firm has to suggest any modifications in the specification of the cable to withstand the rigors of the harsh seabed.

b. Supply of Submarine Fiber optic cable and other items as mentioned in the list of deliverables
The firm has to supply the submarine fiber optic cable as per the specification.

c. Mobilisation
The firm has to mobilize the cable laying equipment like cable ship, plough, winch etc. as per the requirement.

d. Undersea Cable Lay and beach landings
Laying of the sub-marine cable under the sea-bed at a depth of two meters as per the specification and termination at both ends at user identified building.

e. Commissioning
The submarine cable has to be tested as per the cable specification and commissioned.

Marine survey of the area and design of cable Route

* Preliminary information of the area
a) Shallow water: The depth of water varies from minimum of two meters to maximum of 10 meters in the area.
b) Fishing Trawler: Fishing trawlers use the area to get into the deep sea. However fishing activity is there sparingly in the area.
c) Moving bottom: The sea bottom is having a moving profile.
d) A sea port within a distance of approx 2 Km from mainland complex

* Marine Survey
a) Geo-technical data as required for the entire operation are to be arranged /collected by the firm.
b) The firm has to undertake a marine route survey including the burial assessment survey for finding the best suitable cable route.
c) All logistics support like boats, survey equipment etc., have to be arranged by the firm for undertaking the survey.

d) The firm should make available a copy of the survey report.

• Finalizations of cable type, depth of burial and route
a) The firm shall suggest any modifications required on the construction of cable for adequate protection after the survey as per the threats in the area.
b) The firm has to submit the cable route plan for approval before the mobilization and laying activities.
c) After the approval of the cable route plan the firm has to confirm the exact length of submarine cable required.
d) The firm shall suggest the safe burial depth and right type of cable burial procedure suitable for the area.

3. Supply of Submarine Fiber optic cable
The firm has to supply the cable as per the broad specification mentioned below. The cable has to be engineered based on the marine survey and the broad specification outlined below.
Benchmark product- Nexans URC-1 DA1.9_3.2

4. General
- The cable should be a proven one and should have been designed to perform reliably for a life period of 25 years.
- The cable design should be suitable for shallow water and abrasive sea floors.
- The cable should be suitable for unrepeatered application.
- The cable should be robust to withstand the stress and strain associated with laying and recovery operation
- The cable should have corrosion protection. Armour wires used for the cable should be protected from corrosion.
- The cable power conductor should be able to carry fault-locating signals.
- The cable should be sufficiently abrasion resistant so that during cable handling the outer surface of the cable will not be damaged.
- The cable should have been qualified for use with Universal Quick Joint (UQJ).
- The cable jacket should inhibit biological fouling and attack
- In case of a cable break, seawater ingress should be limited to short length so that majority of cable remains serviceable.

5. Cable Construction
- While constructing the cable the general points as stated in paragraph above should be taken into account.
- The cable construction should be based on Tube technology. The optical fibers should be hermetically sealed inside a tube and tube should be filled with water blocking compound.
- The cable should consist of 12 single mode fiber pairs (24 fibers)
- All the fibers should follow the international color-coding standard.
- The cable should have a power conductor.
- The cable should have double or more metallic armor coating for protection from external threat.

6. Fiber attributes
(Single Mode Undersea Optical Fiber as per ITU-T G.652 D recommendation)

<table>
<thead>
<tr>
<th>ATTRIBUTE</th>
<th>DETAIL</th>
<th>VALUE</th>
</tr>
</thead>
</table>
### Operating wavelength

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode field diameter @1310nm</td>
<td>9.2 ± 0.4 µm</td>
</tr>
<tr>
<td>Mode field diameter @1550nm</td>
<td>10.4 ± 0.5 µm</td>
</tr>
</tbody>
</table>

### Attenuation Coefficient

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attenuation Coefficient Maximum at 1310 nm</td>
<td>0.4 dB/km</td>
</tr>
<tr>
<td>Attenuation Coefficient Maximum at 1550 nm</td>
<td>0.3 dB/km</td>
</tr>
</tbody>
</table>

### Zero Dispersion wavelength

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero Dispersion wavelength Nominal</td>
<td>1300-1320 nm</td>
</tr>
</tbody>
</table>

### Dispersion at 1550 nm

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dispersion at 1550 nm Nominal in ps/nm/km</td>
<td>+18.5</td>
</tr>
<tr>
<td>Dispersion at 1550 nm Tolerance</td>
<td>1%</td>
</tr>
</tbody>
</table>

### Chromatic Dispersion coefficient

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromatic Dispersion coefficient Nominal in ps/nm²/km</td>
<td>0.06-0.08</td>
</tr>
</tbody>
</table>

### Note:
- The fiber should possess high mechanical reliability to withstand against the high tensile strength experienced by the submarine cable.
- The fiber should have been designed with a life of 25 years by reducing the effect of Hydrogen sensitivity to possess high optical stability.
- The colors of all the fibers should be unique and should follow the International standard.

### 7. Cable attributes

#### (a) Mechanical

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>VALUE</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable Outer Diameter</td>
<td>25(approx)</td>
<td>mm</td>
</tr>
<tr>
<td>Fiber &amp; cable Breaking load (UTS)</td>
<td>Better than or equal to 200</td>
<td>kN</td>
</tr>
<tr>
<td>Nominal Transient Tensile Strength (NTTS)</td>
<td>Better than or equal to 150</td>
<td>kN</td>
</tr>
<tr>
<td>Nominal Operating Tensile Strength</td>
<td>Better than or equal to 80</td>
<td>kN</td>
</tr>
<tr>
<td>Nominal Permanent Tensile Strength (NPTS)</td>
<td>Better than or equal to 50</td>
<td>kN</td>
</tr>
<tr>
<td>Minimum bending radius under Tension</td>
<td>Less than or equal to 0.75</td>
<td>Meter</td>
</tr>
<tr>
<td>Minimum bending radius under no Tension</td>
<td>Less than or equal to 0.5</td>
<td>Meter</td>
</tr>
<tr>
<td>Cable Modulus</td>
<td>16</td>
<td>KM</td>
</tr>
<tr>
<td>Hydrodynamic Constant</td>
<td>Better than or equal to 100</td>
<td>Degree-knots</td>
</tr>
</tbody>
</table>

#### (b) Physical

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>VALUE</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight in Air</td>
<td>1.9±0.2</td>
<td>Kg/m</td>
</tr>
<tr>
<td>Weight in water</td>
<td>1.3±0.2</td>
<td>Kg/m</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-10 to +40</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature Range</td>
<td>-30 to +60</td>
<td>°C</td>
</tr>
<tr>
<td>Pressure Resistance</td>
<td>Better than or equal to 25</td>
<td>MPa</td>
</tr>
</tbody>
</table>

#### (c) Electrical
### CHARACTERISTICS

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>VALUE</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable Conductor resistance</td>
<td>≤ 7</td>
<td>Ohm/km at 20 deg. C</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>Better than 300</td>
<td>MOhm-km</td>
</tr>
<tr>
<td>Conductor Capacitance</td>
<td>Less than or equal to 500</td>
<td>nF/km</td>
</tr>
<tr>
<td>Power feed Voltage</td>
<td>Maximum 200</td>
<td>Volt</td>
</tr>
</tbody>
</table>

Temperature effect on Insulation resistance and capacitance should be negligible.

8. Specification of 24 Core Armored Single Mode FO Cable (to be deployed at both ends from beach landing point to user identified building)

Standard 24 core armored single mode FO cable is required to be laid from beach landing point at both ends to the user identified building where end equipments will be kept. This will reduce the requirement of submarine cable. Specification of the cable is given below:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Specifications</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Acceptable cable brand</td>
<td>Commscope/Tyco/Belden</td>
</tr>
<tr>
<td>2</td>
<td>Cable Type</td>
<td>24 fiber Single Mode, single jacketed, single armored, Multi-tube, stranded loose tube, Gel free cable suitable for use in direct burial, outdoor ducts and backbone cabling.</td>
</tr>
<tr>
<td>3</td>
<td>Loose Tube Color</td>
<td>Blue, Orange, Green &amp; Brown</td>
</tr>
<tr>
<td>4</td>
<td>Loose tube material</td>
<td>PBTP Loose gel free dry tubes with water swell able yarns/tapes</td>
</tr>
<tr>
<td>5</td>
<td>Jacket material, Color</td>
<td>HDPE outer jacket, black</td>
</tr>
<tr>
<td>6</td>
<td>Jacket thickness</td>
<td>2 mm Min.</td>
</tr>
<tr>
<td>7</td>
<td>Armor</td>
<td>Corrugated steel tape armour of min. 0.15 mm thickness</td>
</tr>
<tr>
<td>8</td>
<td>Cable Construction Type</td>
<td>BELLCORE Telcordia GR-20-Core Issue 3/ IEC 794-1</td>
</tr>
<tr>
<td>9</td>
<td>Central Strength members</td>
<td>FRP Rod/Fiberglass Epoxy Rod</td>
</tr>
<tr>
<td>10</td>
<td>Core Wrapping</td>
<td>Central strength member around which the loose tubes should be arranged Symmetrically</td>
</tr>
<tr>
<td>11</td>
<td>Tensile Strength (short term)</td>
<td>&gt;= 2500 N</td>
</tr>
<tr>
<td>12</td>
<td>Tensile Strength (long term)</td>
<td>&gt;= 750 N</td>
</tr>
<tr>
<td>13</td>
<td>Cable Diameter</td>
<td>&lt;= 13.7 mm</td>
</tr>
<tr>
<td>14</td>
<td>Fiber Type</td>
<td>Single Mode, 9/125 micron primary coated buffers, zero water peak, OS2 (IEC 60793-2-50, B1.3 and ITU-T G652.D) fiber</td>
</tr>
<tr>
<td>15</td>
<td>Attenuation</td>
<td>@ 1310nm &lt;=0.4 db/Km</td>
</tr>
<tr>
<td></td>
<td></td>
<td>@ 1550nm &lt;=0.3 db/Km</td>
</tr>
<tr>
<td></td>
<td></td>
<td>@ 1380-1386nm &lt;= 0.4db/Km</td>
</tr>
<tr>
<td>16</td>
<td>Cut Off Wave length (nm)</td>
<td>&lt;1260</td>
</tr>
<tr>
<td></td>
<td>Chromatic Dispersion @ 1310nm (ps/nm x Km)</td>
<td>&lt;=3.5</td>
</tr>
<tr>
<td>---</td>
<td>------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>18</td>
<td>Chromatic Dispersion @ 1550nm (ps/nm x Km)</td>
<td>&lt;=18</td>
</tr>
</tbody>
</table>
| 19 | Mode Field Diameter                       | 9.2 µm±0.3 µm @ 1310 nm  
                              | 9.6 µm±0.5 µm @ 1385 nm  
                              | 10.4 µm±0.6 µm @ 1550 nm  |
| 20 | Operating Temperature                      | -20 Degree C to +70 Degree C |
| 21 | RoHS Compliant                            | The FO cable should be ROHS compliant |
| 22 | Cable length                              | 2250 Meters |

9. Undersea Cable Lay and beach landings

- The submarine cable shall be tested as per the recommendation of ITU-T G.976 prior to laying. The firm has to supply a test procedure document and tests shall be carried out accordingly.
- ITR shall provide the start and end points of the cable deployment. Both the end points are approximately 1000 meters and 1250 meters away from the shore respectively.
- The cable has to be laid inside HDPE conduit (Duraline make or equivalent having outer diameter 40mm., wall thickness 3.5mm or better) on the land portion at both ends inside the existing cable trench. The HDPE conduits have to be supplied by the firm. The laying of submarine cable can start from either of the two ends.
- The cable has to be laid at a depth of two meters with tolerance of +/- 0.2 meter throughout on the sea-bed as well as on land.
- The submarine FO cable has to be suitably anchored on sea-bed where sharp change of route takes place.
- Suitable classified/certified burial equipment/plough has to be used for laying the cable. Continuous monitoring and recording of its position and cable tension during burial operation are essential.
- Continuous monitoring and recording electronically in respect of cable burial depth, cable tension and cable track during entire operation are essential.
- A constant deployment tension needs to be maintained during deployment activities. Due care has to be taken for not exceeding the normal tension.
- During the entire operation qualified master mariner/marine superintendent and cable experts with past experience have to be deployed.
- The transmission quality of the fibers should be continuously or periodically monitored during the laying operations as per the recommendation of ITU-T G.976.
- Both the ends of the cable have to be terminated on Fiber Distribution Frames with SC-PC connector. The firm has to supply suitable Fiber Distribution Frame at both the ends. Fifty patch chords of fifteen-meter length with SC-PC Connectors have to be supplied by the firm.
- Post deployment cum burial survey/inspection has to be conducted to plot the cable burial depth and track using suitable cable tracker system.
- The firm shall provide any diving assistance needed during deployment activities.

10. Mobilization

- For cable laying operation suitable vessel has to be mobilized. The vessel should have suitable deck crane to deploy/recover burial equipment/plough, cable tracker computer display with DGPS interface equipment, diving support system, cable winch/engine, generators, hand winches, water depth measurement system, etc, for utilization.
• Jetties are available at both ends with 2 cranes of 80 Ton capacities each. These cranes may be used if required.
• The firm has to transport the cable drum to the jetty, mount the cable drum onto the cable ship or reel the cable onto a separate cable drum on ship at his own cost. All preparation and logistics of loading the cable drum on ship etc., shall be borne by the contractor. However the existing Crane facilities at both the Jetties shall be provided.
• Suitable cable engine/winch of adequate cable storage capacity capable of smooth deployment/recovery with continuous monitoring and plotting of cable tension and tripping/alerting system in case of excessive cable tension have to be provisioned by the firm.

11. Commissioning
• The firm has to provide the following documents before the final commissioning.
  
  a) Detailed work document on activities undertaken per day basis during deployment
  b) The cable lay route in WGS 84 co-ordinate system including the burial depth
  c) An ATP (Acceptance Test Procedure) document

• The submarine cable shall be tested as per the ATP document prepared based on recommendation in ITU-T G.976 after completion of laying. Then the test report shall be compared with the test report generated before laying. The deployment shall be considered successful if both the test reports match within acceptable limits.

12. Delivery Schedule: Services is required within **365 Day(s)** from the date of issue of supply order. A definite assured delivery schedule should be quoted.

13. Miscellaneous
• Cable Damage: No damages to the cable during deployment shall be acceptable. In case of any damage the entire cable has to be replaced by the firm.
• Collateral Damage: The firm has to provide compensation against collateral damage to any underwater equipment/cable already deployed near the site/route.
• Time Schedule: The firm has to complete the turnkey project at the earliest not exceeding twelve months from the date of placement of supply order/contract.
• Certification: The firm has to arrange an accredited and competent agency to certify that the cable has been buried at a depth of two meters as per the specification using electronic submarine cable survey system.
• Warranty and maintenance support: The firm has to give warranty for 15 years on the manufacture, deployment and burial of the cable. The cable has to exhibit stable optical performance for 15 years.

The firm has to ensure operational condition of the cable including all 24 core fiber during 15 years of warranty period. In case of any failure due to cable cut, cable damage or due to any other reason, the firm has to repair/replace the cable within 3 months of report.

The firm has to carry out preventive maintenance of the cable at least once in a year during warranty period. This includes physical inspection of cable in the beach landing area and corrective action if necessary.

The firm has to submit performance bank guarantee of 10% of the contract value valid for the warranty period +02 months.
• Factory Inspection: The submarine cable shall be inspected at the original cable manufacturer’s premises before shipment to Integrated Test Range as per the ITU-T Recommendation G.976.

• Acceptance: Director will be the final acceptance authority of the supply and works undertaken based on mutually agreed acceptance criteria.

C. Documents Comprising The Bid
   1. Documents (audited annual financial statement, certificates, work order etc.) to prove the experience criteria.
      
      The techno-commercial proposal shall furnish the following in addition to the details asked in tender document.
      
      i. Compliance to specification
      ii. PERT Chart for the complete turnkey project
      iii. Detailed specification of submarine cable depicting the make, part number etc., along with construction details quoted. Supporting documents against 25 years of design life of submarine fibre optic cable issued by OEM to be submitted along with the bid.
      iv. References of the quoted submarine cable to be laid at various places globally.
      v. Detailed report of cable laying procedure to be adopted by the firm
      vi. Experience Certificates of submarine cable laying
      vii. Experience certificate of the Executing team

   2. Consortium agreement /MoU (only if applicable).
   3. EMD , Power of Attorney (associated Appendices & Annexures)
   4. Bid submission form, Declarations (refer list of Annexures)

D. Bidders must submit their EOI online through TCIL e-tendering portal Refer Appendix -1. Submission of Online Bids is mandatory for this Tender. Only the following shall be accepted in physical form:
   • EMD in the form of Demand Draft/Bank Guarantee
   • Integrity Pact Agreement duly signed and stamped by Authorized Signatory and Witnesses.
   • Pass Phrase in sealed cover.
   All other documents shall have to be submitted in Electronic/Soft form and shall not be accepted in physical form.
   • Pass Phrase in sealed cover.

E. Evaluation Procedure
   Following procedure shall be adopted in evaluating the proposals:
   1. Pre-qualification/eligibility criteria would be evaluated first. The bids without the EMD will be disqualified.
   2. In the second stage, the technical bid/ offers of the bidders meeting the pre-qualification/eligibility criteria would be evaluated.
   3. The Financial bids of the technically qualified Bidders will be opened. Partial quote are liable to be rejected.
   4. The bidder whose bid cost is lowest (L1 bidder) will be selected. TCIL will participate in the tender as lead bidder in consortium with the selected bidder (L1 bidder).

F. Terms & conditions
1. TCIL reserves the right to accept or reject the response against this EOI, of any of the participants without assigning any reasons. The decision of TCIL is final and binding on the participants.
2. The evaluation committee will determine whether the financial proposal/ information are complete in all respects and the decision of the evaluation committee shall be final.
3. Bidder must submit the Technical Proposal and Financial Proposal in the format as mentioned in this document.
4. The Bids should remain valid for **180 days** from the last date of submission of the Bids to the client in Odisha.
5. All the payments shall be made in INR only.
6. Companies interested in working with TCIL on exclusive basis and on back to back terms & conditions including the EMD, PBG and payment terms may kindly submit their proposal against this Expression of Interested (EOI) available on TCIL website (http://tcil-india.com) & CPPP (https://eprocure.gov.in/eprocure/app). Last date of submission of offer is 09.03.2018 up to 16:00 Hrs. The payment terms of the Project shall be on back to back basis.

Mrs. Shivalini Sinha  
Group General Manager (TC)  
5th Floor, TCIL Bhawan,  
Greater Kailash–I  
New Delhi – 110 048  
Ph: 011-26202505  
Fax: 011-26241422  
Email: shivalini.sinha@tcil-india.com
### Tentative List of Deliverables:

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Description &amp; nature of supplies/Services</th>
<th>Qty Required</th>
<th>Measuring Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Submarine FO Cable</td>
<td>20 (approx)</td>
<td>Kms</td>
</tr>
<tr>
<td>02</td>
<td>24 Core Armored Single Mode Cable</td>
<td>2250</td>
<td>Meters</td>
</tr>
<tr>
<td>03</td>
<td>HDPE Conduits</td>
<td>2250</td>
<td>Meters</td>
</tr>
<tr>
<td>04</td>
<td>24 port Fiber Distribution Frames with SC type connector (fully loaded)</td>
<td>02</td>
<td>Nos</td>
</tr>
<tr>
<td>05</td>
<td>Patch Chords of 15 Meter Length, SC-LC type</td>
<td>50</td>
<td>Nos</td>
</tr>
<tr>
<td>06</td>
<td>Marine survey of the area and design of cable route</td>
<td>01</td>
<td>job</td>
</tr>
<tr>
<td>07</td>
<td>Mobilisation of manpower, equipment and accessories for cable laying</td>
<td>01</td>
<td>job</td>
</tr>
<tr>
<td>08</td>
<td>Laying of the cable under seabed</td>
<td>01</td>
<td>job</td>
</tr>
<tr>
<td>09</td>
<td>Beach landings at both ends</td>
<td>01</td>
<td>Job</td>
</tr>
<tr>
<td>10</td>
<td>Laying of the cable on the shore at both ends for 2250 meter</td>
<td>01</td>
<td>Job</td>
</tr>
<tr>
<td>11</td>
<td>Splicing and termination of FO cable at both ends to the FDF</td>
<td>01</td>
<td>Job</td>
</tr>
<tr>
<td>12</td>
<td>Post deployment cum burial survey using cable tracker system for depth of burial and track</td>
<td>01</td>
<td>job</td>
</tr>
<tr>
<td>13</td>
<td>Testing of submarine cable before, during and after laying</td>
<td>01</td>
<td>job</td>
</tr>
<tr>
<td>14</td>
<td>Warranty and maintenance support for 15 years</td>
<td>01</td>
<td>job</td>
</tr>
</tbody>
</table>
Annexure-2

**Compliance to RFP Specification:** Bidders are required to furnish clause by clause compliance of specifications bringing out clearly the deviations from specification, if any. Bidders are advised to submit compliance statement for the technical parameters separately in the following format along with the Techno-Commercial Bid:

<table>
<thead>
<tr>
<th>Para of RFP specifications (item-wise)</th>
<th>Specifications of item offered (With Make &amp; Model)</th>
<th>Compliance to RFP specifications – whether Yes / No</th>
<th>Remarks (In case of non-compliance, deviation from RFP to be specified in unambiguous terms. In case of compliance, catalogue / brochure reference, if available, to be indicated)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For Commercially-Off-The-Shelf (COTS) items, it is mandatory to enclose catalogue/technical brochure to support the claims of compliance.
### Annexure-3
**Format for Price Bid**

<table>
<thead>
<tr>
<th>S.No</th>
<th>Description &amp; nature of supplies/services</th>
<th>Qty</th>
<th>Unit</th>
<th>Unit Rate</th>
<th>Total Basic Cost</th>
<th>Tax (%)</th>
<th>Total Tax</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>SUPPLIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>Submarine FO Cable</td>
<td>16</td>
<td>Kms.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>24 Core Armored Single Mode Cable</td>
<td>2250</td>
<td>Meters</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>Spare Submarine FO Cable</td>
<td>04</td>
<td>Kms.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>HDPE Conduits</td>
<td>2250</td>
<td>Meters</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>05</td>
<td>Fiber Distribution Frames</td>
<td>02</td>
<td>Nos.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>06</td>
<td>Patch Chords of 15 Meter Length</td>
<td>50</td>
<td>Nos.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>SERVICES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>06</td>
<td>Marine survey of the area and design of cable route including certification cost for cable burial depth of 2m (refer clause No.4).</td>
<td>01</td>
<td>Job</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07</td>
<td>Mobilisation of manpower, equipment and accessories for cable laying</td>
<td>01</td>
<td>Job</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>08</td>
<td>Laying of the cable under seabed</td>
<td>01</td>
<td>Job</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>09</td>
<td>Beach landings at both ends</td>
<td>01</td>
<td>Job</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Laying of the cable on the shore at both ends for 2250 meter</td>
<td>01</td>
<td>Job</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Splicing and termination of FO cable at both ends to the FDF</td>
<td>01</td>
<td>Job</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Post deployment cum burial survey using cable tracker system for depth of burial and track</td>
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<td>14</td>
<td>Warranty and maintenance support for 15 years</td>
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<td>Job</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>(A)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(B)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Grand Total (A+B)

Total basic cost in words

Total Tax in words

Grand Total in words
FORMAT OF BID BOND (EMD)

Whereas ……………………. (Hereinafter called “the Bidder”) has submitted its bid dated …………… For the supply of …………. Vide Tender No. ……………………….. dated …………… KNOW ALL MEN by these presents that WE …………………….. OF ………………. Having our registered office at ………….. (hereinafter called “the Bank”) are bound unto Telecommunications Consultants India Limited (hereinafter called “the Purchaser”) in the sum of Rs. ………………… for which payment will and truly to be made of the said Purchaser, the Bank binds itself, its successors and assigns by these present.

THE CONDITIONS of the obligation are:
1. If the Bidder withdraws his bid during the period of bid validity specified by the Bidder on the Bid form or
2. If the Bidder, having been notified of the acceptance of his bid by the Purchaser during the period of bid validity
   (a) fails or refuses to execute the Contract, if required; or
   (b) fails or refuses to furnish the Performance Security, in accordance with the instructions to Bidders.

We undertake to pay to the Purchaser up to the above amount upon receipt of its first written demand, without the purchaser having to substantiate its demand, provided that in its demand, the purchaser will note that the amount claimed by it is due to it owning to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including THIRTY (30) days after the Period of bid validity and any demand in respect thereof should reach the Bank not later than the specified date/dates.

Signature of the Bank Authority.  
Name  
Signed in Capacity of

Name & Signature of witness  
Full address of Branch

Address of witness  
Tel No. of Branch

Fax No. of Branch
Appendix -1

1. **Online Bids**

   Please note that official procurement/downloading of Tender document from ETS portal of TCIL is mandatory and that the bidder will in no case be able to participate in the tender without having procured/downloaded the official copy of the tender from ETS portal of TCIL before the due date and time for the same. Submission of Online Bids is mandatory for this Tender. Only the following shall be accepted in physical form:
   - Tender Fee in the form of Demand Draft
   - EMD in the form of Demand Draft/Bank Guarantee
   - Integrity Pact Agreement duly signed and stamped by Authorized Signatory and Witnesses.
   - Pass Phrase in sealed cover.

   All other documents shall have to be submitted in Electronic/Soft form and shall not be accepted in physical form.

2. **Bidding Methodology:**

   Single-stage Two-Bid System (Technical Part and Financial Part to be submitted at the same time) shall be followed.

3. **Broad outline of activities from Bidders perspective:**

   i) Procure Digital Signature Certificates (DSC) for users of the organization (if not procured earlier)
   iii) Create Users and assign roles on ETS
   iv) Assign Tender to a department of your organization on ETS
   v) Download Official Copy of Tender Documents from ETS
   vi) Clarification to Tender Documents on ETS
      – Post query to TCIL (Optional)
      – View response to queries posted by TCIL
   vii) Online Bid-Submission on ETS
   viii) Attend Online Public Tender Opening Event (TOE) for Techno-Commercial Bid on ETS
      – Opening of Technical-Part
   ix) Post-TOE Clarification on ETS (Optional)
      – Respond to TCIL’s Post-TOE technical queries
   x) Attend Public Online Tender Opening Event (TOE) for Financial Bid on ETS
      – Opening of Financial-Part
      (Only for Technically Responsive Bidders)
4. Digital Certificates

For integrity of data and its authenticity/ non-repudiation of electronic records, and to become compliant with IT Act 2000, it is necessary for each user to have a Digital Certificate (DC), also referred to as Digital Signature Certificate (DSC), of Class 2 or above, issued by a Certifying Authority (CA) licensed by Controller of Certifying Authorities (CCA) [refer http://www.cca.gov.in].

5. Registration

To use the Electronic Tender® portal (https://www.tcil-india-electronictender.com) the Bidder need to register on the portal. Registration of bidders organization is to be done by one of its senior persons who will be the main person coordinating for the e-tendering activities. In ETS terminology, this person will be referred to as the Super User (SU) of that organization. For further details, please visit the website/portal, and click on the ‘Selected agency Organization’ link under ‘Registration’ (on the Home Page), and follow further instructions as given on the site. Pay Annual Registration Fee as applicable.

Note: After successful submission of Registration details online and Annual Registration Fee (Rs. 6,000/- + applicable Service Tax) physically to TCIL, please contact e-Tendering Helpdesk (as given in Section 1), to get your registration accepted/activated. The Annual Registration Fee can be submitted by the following modes:

i) DD in favour of “Telecommunications Consultants India Limited” is to be submitted to Sr. Manager (F&A-IT), TCIL, TCIL Bhawan, 6th Floor, G.K.-I, New Delhi-110048.

Or

ii) Fee Amount can be deposited in TCIL’s Bank Account No. 000705005880 in ICICI Bank, Connaught Place Branch, IFSC Code: ICIC0000007 by electronic transfer and Transaction Details to be emailed to ets_support@tcil-india.com

6. On-Line Submission

The On Line Submission will have the following activities:

i) Submission of digitally signed copy of Tender Documents/ Addendum

ii) Submission of Compliance Statement of the RFP.

iii) Submission of particulars of EMD and Tender Fee

iv) Submission of Technical Part as under:

- Submission of Electronic Form (Mandatory)
- Submission of Main Bid (Mandatory)
- Submission of Bid Annexure (optional)

Technical Part must contain the following which is required to be submitted in the Main Bid/Bid Annexure:

a) Duly filled in Bid Submission Form as per Annexure -1.

b) Statement showing Clause by Clause Compliance to all Terms & Conditions of all the Sections of the Tender.
c) Scanned copy of Documentary Evidence of Eligibility Criteria  
e) Any other supporting documents the bidder wishes to submit as a part of Technical Offer

v) Submission of Financial Part as under:
   - Submission of Electronic Form (Mandatory)
   - Submission of Main Bid (Mandatory)
   - Submission of Bid Annexure (Optional)

Financial Part must contain the Price Bid Schedule as per Annexure -6. The entire bid-submission as above would be online on ETS.

7. Offline Submissions:

The bidder is requested to submit the following documents offline (i.e. physically) either in the Tender Box kept in the o/o GGM (TC), TCIL Bhawan, 5th Floor, Greater Kailash-I, New Delhi-110 048 or by post to as reach o/o GGM (TC), TCIL before the due date & time of submission in a Sealed Envelope, the envelope shall bear, the Tender No. & Description and the words ‘DO NOT OPEN BEFORE’ (due date & time):
   i) EMD/Bid Security (Original) for Rs. 5 lakhs/- by Demand Draft in favour of “Telecommunications Consultants India Ltd.” / Bank Guarantee in the prescribed format from a scheduled bank.
   ii) Tender Fee of Rs. 1000/- by Demand Draft in favour of “Telecommunications Consultants India Limited” payable at New Delhi.
   iii) Integrity Pact Agreement duly signed and stamped by Authorized Signatory and Witnesses.

8. Special Note on Security of Bids

Security related functionality has been rigorously implemented in ETS in a multidimensional manner. Starting with ‘Acceptance of Registration by the Service Provider’, provision for security has been made at various stages in Electronic Tender's software.

Specifically for Bid Submission, some security related aspects are outlined below: As part of the Electronic Encrypter™ functionality, the contents of both the ‘Electronic Forms’ and the ‘Main-Bid’ are securely encrypted using a Pass-Phrase created by the Bidder himself. Unlike a ‘password’, a Pass-Phrase can be a multi-word sentence with spaces between words (eg I love this World). A Pass-Phrase is easier to remember, and more difficult to break. It is recommended that a separate Pass-Phrase be created for each Bid- Part.

Typically, ‘Pass-Phrase’ of the Bid-Part to be opened during a particular Online Public Tender Opening Event (TOE) is furnished online by each bidder during the TOE itself, when demanded by the concerned Tender Opening Officer. A bid cannot be opened without a correct Pass-Phrase.
It may also be noted that if a bidder fails to furnish the correct Pass-Phrase during the TOE of Technical Part, the bid shall be rejected. If the bidder fails to furnish the correct Pass-Phrase during the TOE of Financial Part, not only shall the bid be Rejected but also the EMD shall be forfeited.

There is an additional protection with SSL Encryption during transit from the client-end computer of a selected agency organization to the e-tendering server/portal.

9. **Online Public Tender Opening Event (TOE)**

ETS offers a unique facility for ‘Online Public Tender Opening Event (TOE)’. Tender Opening Officers as well as authorized representatives of bidders can attend the Online Public Tender Opening Event (TOE) from the comfort of their offices. For this purpose, representatives of bidders (i.e. Selected agency organization) dully authorized are requested to carry a Laptop and Wireless Connectivity to Internet.

Every legal requirement for a transparent and secure ‘Online Public Tender Opening Event (TOE)’ has been implemented on ETS.

As soon as a Bid is decrypted with the corresponding ‘Pass-Phrase’ as submitted online by the bidder himself (during the TOE itself), salient points of the Bids are simultaneously made available for downloading by all participating bidders. The tedium of taking notes during a manual ‘Tender Opening Event’ is therefore replaced with this superior and convenient form of ‘Online Public Tender Opening Event (TOE)’.

ETS has a unique facility of ‘Online Comparison Chart’ which is dynamically updated as each online bid is opened. The format of the chart is based on inputs provided by TCIL for each Tender. The information in the Comparison Chart is based on the data submitted by the Bidders. A detailed Technical and/ or Financial Comparison Chart enhances Transparency. Detailed instructions are given on relevant screens.

ETS has a unique facility of a detailed report titled ‘Minutes of Online Tender Opening Event (TOE)’ covering all important activities of ‘Online Tender Opening Event (TOE)’. This is available to all participating bidders for ‘Viewing/Downloading’

10. **Other Instructions**

For further instructions, the Bidder should visit the home-page of the portal (https://www.tcil-india-electronictender.com), and go to the User-Guidance Center The help information provided through ‘ETS User-Guidance Center’ is available in three categories – Users intending to Register / First-Time Users, Logged-in users of Buyer organizations, and Logged-in users of Selected agency organizations. Various links are provided under each of the three categories.
Important Note: It is strongly recommended that all authorized users of Selected agency organizations should thoroughly peruse the information provided under the relevant links, and take appropriate action. This will prevent hiccups, and minimize teething problems during the use of ETS.

The following ‘FOUR KEY INSTRUCTIONS for BIDDERS’ must be assiduously adhered to:

i) Obtain individual Digital Signature Certificate (DSC or DC) well in advance of tender submission deadline on ETS
ii) Register your organization on ETS well in advance of tender submission deadline on ETS
iii) Get your organization’s concerned executives trained on ETS well in advance of tender submission deadline on ETS
iv) Submit your bids well in advance of tender submission deadline on ETS
(There could be last minute problems due to internet timeout, breakdown, etc.)
While the first three instructions mentioned above are especially relevant to first-time users of ETS, the fourth instruction is relevant at all times.

11. Minimum Requirements at Bidders end

- Computer System with services configuration (Min P IV, 1 GB RAM, Windows XP SP3)
- Broadband Internet Connectivity.
- Microsoft Internet Explorer 6.0 or above
- Digital Certificate(s)

12. Integrity Pact Programme

1. As a part of implementation of Integrity Pact Programme (IPP) in TCIL, all tenders with the estimate value equal to or exceeding the threshold value will be covered under the Integrity Pact Programme (IPP) and the vendors are required to sign the IP document and submit the same to TCIL before or along with the bids.

The present threshold value is Rs. 1 Cr. (Rupees One Crore)

2. Even in case of tenders with the estimated value less than the threshold value, the vendors would be required to sign the IP document if the total value of the Purchase Orders (POs) exceeds the threshold value in respect of:
   - Multiple/repeat POs on the single vendors against a tender
   - POs placed on multiple vendors against a tender

3. Only those vendors who have purchased the tender document and signed the IP document can send their grievances, if any, to the Independent External Monitors (IEMs) through the nodal officer, i.e. Chief Vigilance Officer (CVO). TCIL in the prescribed proforma.
Name of IEMs with their contact Details:

a) Shri N.P. Gupta, Independent External Monitor  
   E-mail ID: enpeeg33@hotmail.com  
ii) Shri Samir Kumar Singh, Independent External Monitor  
   Email ID: samir_k_singh@yahoo.com

Name & contact details of Nodal Officer (IP) in TCIL:
Ms. Hardeep Kaur, Chief Vigilance Officer  
E-mail ID: hardeep@tcil-india.com

4. If the Order, with total value equal to or more than the threshold value, is split to more than one vendor and even if the value of PO placed on any/each vendor(s) is less than the threshold value, IP document having been signed by the vendors at bid stage itself, the Pact shall continue to be applicable.

5. In respect of tenders for Pre-bid tie up/Expression of Interest (EOI) : In case of TCIL getting the Order from the client, before placement of Purchase Order/Work Order on technically & commercially qualified vendor, the selected vendor is required to sign the IP document.

6. IP document shall be in plain white sheet and to be signed by the vendor and TCIL with two witnesses from each party. The name, designation, company etc. of the persons signing the IP document and the project/tender name shall be clearly mentioned. All pages of the IP document shall be initiated by both parties along with company seal.

7. Tender received without signed copy of the Integrity Pact document will be liable to be rejected.