



ODISHA POWER TRANSMISSION CORPORATION LTD.  
Office of the Chief General Manager (IT)  
Janpath, Bhubaneswar-751022

Open Tender No. TW-IT/OT/02/2013-14

For

Extension of OPTCL-GRIDCO-SLDC Wide  
Area Network (OGS-WAN)

Date of Opening of tender: **07.06.2013**

Price:Rs.10,000 + VAT



## NOTICE INVITING TENDERS

ODISHA POWER TRANSMISSION CORPORATION LIMITED

BHUBANESWAR-751 022

TENDER NOTICE NO- TW-IT-OT/02/2013-14

The Odisha Power Transmission Corporation Ltd. (OPTCL) invites sealed bids from eligible bidders for the under mentioned project as per description and schedule of quantity given here below:

SI No	TENDER NOTICE NO	Description of Work	Quantity	Earnest Money Deposit [In Rupees]	Last date of receipt and opening of tender
(1)	(2)	(3)	(4)	(5)	(6)
1.	TW/IT/OT/02/2013-14	Extension of OPTCL-GRIDCO-SLDC Wide Area Network (OGS-WAN)	As per Requirements specified	1,14,890 /-	07.06.2013 1.00p.m. & 3.30 p.m. respectively.

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## **SECTION- I**

### GENERAL INFORMATION TO BIDDERS

#### **Name of the Project:**

Extension of OPTCL-GRIDCO-SLDC Wide Area Network  
(OGS-WAN)

1. The Odisha Power Transmission Corporation Ltd. (OPTCL) invites sealed bids from eligible bidders for the under mentioned project as per description and schedule of quantity given here below:

#### **Network Components**

<b>Serial No</b>	<b>Description</b>	<b>Unit of Measurement</b>	<b>Quantity</b>
1	Access Router	Nos	2
2	Layer-3 24 Port Switch 10/100/1000 Mbps Network Managed Switch with 1 FX SFP Slots.	Nos	4
3	Layer-2 48 Port 10/100/1000 Mbps Network Managed Switch with 1 FX SFP Slots.	Nos	6
4	Layer-2 8 Port 10/100/1000 Mbps Network Managed Switch with 1 FX SFP Slots.	Nos	25
5	12U Double Section wall Mounted Network Rack	Nos.	29
6	CAT6 UTP cable (1 Box=305 meter)	Box	99
7	Dual Face Plate Information Outlet with Back Box	Nos	465
8	I/O for work area side	Nos	930
9	I/O for patch panel	Nos	930
10	48 Port Patch Panel(unloaded)	Nos.	12
11	24 Port Patch Panel(unloaded)	Nos.	26
12	CAT6 Patch Cord (3ft)	Nos	666
13	CAT6 Patch Cord (7ft) for user end	Nos	465
14	PVC Pipe with internal diameter of 20mm and min. thickness 2 mm	Mtrs.	4580
<b>Fibre Componenets</b>			
1	FOC om3 MM	Mtrs	6850
2	LIU unloaded	Nos	54
3	SC MM Connector	Nos	324
4	6 port connector panel with SC coupler	Nos	54
5	FOC Patch Cord 10 ft MM SC-LC	Nos	54
6	HDPE Conduit	Mtrs.	6850
7	GLC Fibre Module	Nos	54

## Services Components

Serial No	Description	Unit of Measurement	Quantity
1	Laying of CAT6 Cable with concealing of PVC Pipe along with back box	Mtrs.	4580
2	Installation of Rack	Nos	29
3	Termination of I/O	Nos	1860
4	Laying of Fibre Optic with digging of soil, refiling of soil and laying of conduit	Mtrs.	6850
5	Fixing of LIU	Nos	54
6	Termination of FO Cable	Nos	324
7	Earthing	Nos	29
8	Design, Drawing, Documentation	Nos	8

The **Scope of work** includes the Supply, Installation, Integration, Testing, Commissioning of the above-mentioned items and integrating the same with existing WAN of OPTCL **on turnkey basis**. It also includes other associated services viz, including training of Purchaser's personnel and annual maintenance contract for a period of three years after expiry of the warranty period for three years defined in the bidding document.

2. Interested eligible Bidders may obtain further detailed information on the tender in the bidding document issued by I.T Dept. OPTCL or under "Current Tenders" in our website [www.optcl.co.in](http://www.optcl.co.in).
3. A complete set of bidding documents may be purchased by any interested eligible bidder or their "authorised representative" on submission of written application to Chief General Manager(IT) and upon payment of non-refundable fee as indicated below, either in cash or by a demand draft payable to THE DRAWING AND DISBURSING OFFICER, OPTCL HEAD QUARTERS, BHUBANESWAR.
4. The bidding documents may be obtained from the office of the Chief General Manager (IT), OPTCL during office hours, from 10.00 hrs to 17.00 hrs on all working days either in person or by post.

- |   |   |  |
|---|---|--|
| a) Price of bidding document:                         | : | IRs 10,000/- (Indian Rupees Ten Thousand only) (non-refundable)) + VAT |
| b) Postal charges, inland                             | : | Free of charge   |
| c) Postal charges, overseas                           | : | Free of charge   |
| d) Date of commencement of Sale of bidding document   | : | <b>07.05.2013</b>  |
| e) Last date of sale of bidding document              | : | <b>07.06.2013</b>  |
| f) Last date and time for Receipt of bids             | : | <b>07.06.2013 1.30 PM</b>  |
| g) Time and date of opening of Techno-commercial bids | : | <b>07.06.2013, 3.30 PM</b>   |
| h) Time and date of opening price bids                | : | <b>21.06.2013 3.30 PM</b>  |
| i) Place of opening of bids                           | : | Office of Chief General Manager (IT),                                  |

- 3<sup>rd</sup> Floor, OPTCL Corporate Bldg  
Janpath, Bhubaneswar – 751022.  
Chief General Manager (IT),  
3<sup>rd</sup> Floor, OPTCL Corporate Bldg  
Janapth, Bhubaneswar – 751022.
- j) Address for communication :
5. Bid document can also be downloaded from our website as mentioned at clause-2 above. However, the bidder has to submit the cost of bidding document i.e. Rs.10,000/- + VAT by Demand Draft payable to Drawing and Disbursing Officer(DDO), Headquarters office, OPTCL, Bhubaneswar. The DD must be issued by a nationalized bank **on or before the last date for sale of bidding documents**, as per Section-I.4(e).
6. All bids must be accompanied by a bid security (EMD) in the amount of Indian Rupees Rs. 1,14,890/- only (IRs One Lakh Fourteen Thousand Eight Hundred Ninety only) , and must be delivered to the above office on or before 13.30 hrs on last date for receipt of bids along with the Part – I (Techno-commercial bid) of the tender only.
- The bid security may be submitted in one of the following forms:
- (a) A Bank Guarantee or irrevocable letter of credit issued directly by a nationalized bank, in the form provided in the bidding documents, or
- (b) A crossed bank draft/pay order/bank certified cheque drawn in favor of the Drawing and Disbursing Officer, OPTCL, Headquarters, Bhubaneswar.
7. Bids will be opened in the presence of Bidders or Bidder's representatives who choose to attend at the specified date and time. BIDDER's representatives should submit authorisation letter from the Bidder to OPTCL to attend opening of Bids.
- a) **Part-I of the bid (Techno-commercial)** shall be opened on the stipulated date and time mentioned under clause 4(g) of the GENERAL INFORMATION TO BIDDERS.
- b) After technical evaluation, the **Part-II (Price bid)** of successful/eligible bidders shall be opened as per Schedule mentioned in 4(h) above or a later date as may be decided by the purchaser.
- The bidders shall be intimated the price bid opening date through Notice Board and through OPTCL's web site in case of any change in the date of opening of the price bid.
8. In the event of the date specified for bid receipt and opening being declared as a closed holiday for purchaser's office, the due date for submission of bids and opening of bids will be the following working day at the appointed times.
9. OPTCL reserves the right to cancel/withdraw the invitation for bids without assigning any reasons and shall bear no liability whatsoever consequent upon such a decision.

## 10. QUALIFICATION OF THE BIDDER

- 10.1 The bidder must be an Authorized Computer Network Designer having a direct purchase and support agreement with the Original Equipment Manufacturer (OEMs) of the Networking components. The bidder should provide Manufacturer's **Authorizations Letter** for all Networking components quoted (except the items for which the bidder itself is the OEM) along with the bid. **The ASI should also submit declaration, as a mandatory requirement, by OEMs that the quoted items shall not be outdated within 6 years of supply and that OEM renders necessary spares support to ASI.**
- 10.2 Bidder shall be financially sound and must not be anticipating any ownership change for three years from bid submission. **An undertaking to this effect shall be submitted by the Bidder.**
- 10.3 Bidder shall submit audited financial **reports** for at least three years (2009-10, 2010-11, 2011-12) preceding the date of bid submission. The annual turnover of the bidder shall not be less than **Rs.10 Crores** for above-mentioned financial years and estimated financial projection for the next three years.
- 10.4 Manufacturers shall have adequate design infrastructure, manufacturing facilities and capacity including quality control and after sales service facilities. **Statement** of such facilities in respect of items quoted shall be submitted by the Bidder duly endorsed by the OEMs.
- 10.5 Bidder shall provide satisfactory evidence to the Purchaser of their capability and adequacy of resources to carry out the Contract effectively. The bidder is to include the following with the bid.
- (a) **Copies of original documents** defining the constitution or legal status, place of registration and principal place of business; written power of attorney of the signatory of the bid to commit the bidder;
  - (b) Performance as supplier of goods & Services of similar nature over the last three years, and **details of orders** executed.
  - (c) **Description** of manufacturing facilities, if applicable.
  - (d) The Bidder's key technical engineers should have OEM certifications to install and maintain the IT equipment quoted by the Bidder. The **qualification and experience** of key personnel, at least 3 in number, should be provided who will look after this project.
  - (e) **Proposals** for subcontracting elements of the supply of the goods & Services is not encouraged normally. However subcontracting amounting to less than 10% may be allowed by OPTCL at its discretion.
  - (f) **Evidence** of access to lines of credit, and availability of other financial resources. Certificate from bank indicating sanctioned limit of fund based and non-fund based line of credit and utilization there of not earlier than fifteen days prior to date of opening of tender.
  - (g) **A list** of bidder's banks and authority to seek reference from the banks.

- (h) Information regarding any current litigation in which the bidder is involved, the parties concerned, and disputed amount; **Declaration** to be submitted.
- (i) Details of Quality Assurance Policy. **Policy** to be submitted.
- (j) The bidder shall give an undertaking as a part of this contract to provide technical consultancy and guidance at no extra cost to OPTCL for successful operation. **The Bidder shall submit an undertaking to this effect.**

10.6 In addition to the above the Bidder shall submit the following.

- (a) A **declaration** from the Bidder confirming that he shall supply all the active networking components/equipment from one OEM only.
- (b) A statement of year wise profit for the FYs 2009-10, 2010-11, 2011-12.
- (c) The Bidder must be an ISO 9001-2000 certified **“Network Designer”**. Bidder has to **submit photocopy** of the original certificate along with their bid.
- (d) The bidder must have successfully completed
  - i) Three similar projects, at least one in Govt. Organisation.
  - ii) The documentary proof for the same must accompany the tender. The bidder should submit a list of important customers with documentary evidence along with tender.
- (e) The bidder must have full-fledged service center at Bhubaneswar equipped with spare stock and certified manpower. Alternatively the bidder has to furnish maintenance arrangements through local maintenance organizations equipped with ready availability of spare parts and certified engineers to render maintenance support during warranty as well as post warrants period. The bidder should mention the address, contact person’s name along with the contact number of this service center with the bid.
- (f) For all Networking equipment, the bidder has to quote for 3 years comprehensive on-site warranty.
- (g) The bidder has to ensure providing of at least 25 years Application Assurance Certificate for the passive component of the LAN from the respective OEM.

#### 11. **Manner to submit the bid**

- a) Both Techno commercial Bid and Price Bid of the Tender shall be submitted with a forwarding letter duly signed in the bidders letter head and shall be neatly typed, clearly readable, free from cuts, over writings and erases etc. **Please see note below.**
- b) Amounts quoted in the Price-Bid mentioned in figures must be described in words also. In case of any ambiguity, the fact furnished in words shall only be considered.
- c) Any correction whatsoever in the bid shall be signed by the authorized person competent to sign the bid.
- d) Submission of the technical bid must be **indexed** properly in the chronological manner mentioned below failing which the bid shall be liable for rejection. **All the**



**supporting documents in respect of Clause 10, Section –I shall be submitted by the Bidder.**

- Forwarding letter duly signed by the bidder or their authorised signatory in bidders letter head.
- Bank Guarantee / Irrevocable letter of credit / crossed bank draft / pay order / Bank certified cheque as the case may be towards EMD.
- Authorisation certificate from OEM/Principal to execute the contract or submit the bid.
- OEM's declaration that the equipment shall not be outdated for six(6) years and for necessary spare support to ASI.
- Copies of audited financial report/ Balance Sheet for last 3 years in chronological manner i.e. FYs 2009-10, 2010-11, 2011-12 each page duly numbered.
- Supporting documents to prove the capability of the bidder as required under Clause-10 of the Section-I “General Information to the Bidders”.
- Qualification and experience sheet for key Personnel.
- Proposal for sub contracting elements of supply.
- Evidence of access to lines of credit.
- Authority to seek reference from the bidders Banks.
- Information on current litigation.
- Details of quality assurance policy.
- Proposal of manufacturing method and schedule.
- Bidder's undertaking to provide technical consultancy.
- Technical offer.
- Technical Deviation Statement.
- Check sheets.

**Note:**

- All the pages in the technical bid shall be numbered.
- Information sheets shall be chronologically placed in the manner stated above.
- **A proper index shall be furnished with starting page number of each category of document mentioned above.**

**The techno commercial bid and price bid shall be hard bound and sealed in separate covers super scribing as “Extension of OGS-WAN – Techno-commercial Bid due on xxxxxxxx” and “Extension of OGS-WAN – Price Bid due on xxxxxxxx” respectively. Both the sealed Bids shall be put in an envelope and sealed by super scribing as “Extension of OGS-WAN”. The Techno commercial Bid shall also be provided on a CD in addition to Hard Copy as mentioned above.**

12. OPTCL reserves the right to accept or reject any tender without assigning any reason thereof.

## **SECTION: II**

### INSTRUCTIONS TO BIDDERS

1. Sealed Tenders in duplicate on two part bid basis (each complete with all details in the manner specified together with drawings, test reports, descriptive literature if any) and declarations duly signed on each pages are to be submitted in the Office of Chief General Manager (IT), Orissa Power Transmission Corporation Ltd., Bhubaneswar. Each part of the bid i.e. Techno-commercial Bid(part-I) and Price Bid (Part-II) shall be placed in separate covers duly sealed and super scribed with Part-I/Part-II accordingly. Tender specification number and due date of opening indicated in the “Notice Inviting Tenders” duly super scribed on each cover.
2. The Specification is divided into six Sections:
  - i) Section-I : General Information to Bidders.
  - ii) Section-II : Instructions to Bidders.
  - iii) Section-III : General Conditions of Contract.
  - iv) Section-IV : Schedules of Requirements.
  - v) Section-V : Technical Specifications.
  - vi) Section-VI : Forms & Schedules etc.
3. These tender specifications cover the required quantity of materials. These quantities are to be supplied and install the same by the vendor on receipt of the order. The initial order will be supplied within the stipulated period. If required, the vendor may be additionally required to supply, install and commission the same up to 25% of the initial ordered quantity within six months of the issue of the order without any change in the price and other terms and conditions of the original purchase order.
4. Tenders will be opened in the office of the Chief General Manager (IT) on the stipulated date and time in the presence of such of the tenderers or their authorized representatives (limited to one person) only as may desire to be present, at the time of opening the bids. The Chief General Manager (IT) or his authorized representatives, on opening each bid will read aloud the name of the bidder, price(s) quoted, overwriting and corrections if any in each page of Price bid when it is due to be opened.
5. The tenderer may deviate from the specification while quoting if in his opinion such deviation is in line with the manufacturer’s standard practice and conducive as better and more economical offer. All such deviations should however be clearly indicated giving full justifications for such deviation in a separate sheet(s) under “Deviations” title in the format described in Section-VI and Schedule No. 5.
6. Only those who have purchased the Specification can submit their tender. Tenders submitted by others will be rejected.
7. The purchaser reserves the right to reject the lowest or any other tenders or all tenders without assigning any reason what so ever if it is considered expedient in the overall interest of OPTCL.
8. Tenders shall be submitted in person or by Registered Post with A.D or by Speed Post. Any other means of delivery shall not be accepted.

9. (i) Tenders received after due date and time shall be considered invalid.
- (ii) Telegraphic or Fax Tenders shall not be accepted under any circumstances.
10. (i) The tender shall be accompanied by Earnest Money Deposit of value Specified under clause 6 in Section-I.

**The Earnest Money** Deposit shall be offered in one of the following forms subject to the conditions mentioned below:

- a) **Bank Draft:** To be drawn in favour of Drawing and Disbursing Officer, OPTCL Headquarters, Bhubaneswar – 751022.
- b) **Bank Guarantee** from any Nationalised Bank as per enclosed proforma.

The validity of any of the above guarantees shall be at least 240 days from the date of opening of tender, failing which these tenders will be liable for rejection.

- (ii) No interest shall be paid on Earnest Money Deposit.
- (iii) No adjustment towards Earnest Money Deposit shall be permitted against any outstanding amount with OPTCL.
- (iv) In the case of un-successful tenderer, the Earnest Money will be refunded immediately after the tender is decided. In the case of successful tenderer, this will be refunded only after furnishing of security money referred to Clause-24 Section–III. Suits, if any arising out of this clause shall be filed in a Court of law to which the jurisdiction of High Court of Orissa extends.
- (v) Earnest Money will be forfeited if the tenderer fails to accept the letter of indent and/or Purchase orders issued in his favour as well as satisfactory completion of the project.
- (vi) Tenders not accompanied by Earnest Money shall be dis-qualified.
11. The tenders should be kept valid for a period of **180** days from the date of opening of the tender as notified in the tender notice failing which the tenders will be rejected.
12. a) After opening of tenders and within the validity period no reduction or enhancement in price will be entertained. However, after opening of “Unpriced” bid if some modification of specification is agreed upon by OPTCL, Revised price offer will be considered. In such case revised offers will have to be submitted in separate sealed envelopes super-scribing “Revised Priced Bid” within 7 days of written notice to the bidder.
- b) If required, the tenderer may be requested to revalidate the tender after expiry of the validity period if required under the same terms and conditions as per original tender except for the change in delivery period, if necessary. In such an event the tenderers are free to change any or all conditions of their bids including price at their own risk.

13. Tenderers are expected to be fully conversant with the meaning of all the clauses of the specifications before submitting their tenders. In case of doubt regarding the meaning of any clause the tenderer may ask for clarification in writing from the Chief General Manager (IT), OPTCL, Bhubaneswar. This however, does not entitle the tenderer to ask for time beyond due date fixed for receipt of tender.

14. **List of Documents to be submitted along with the Tender:**

The Bidder must submit the following documents along with the Tender failing, which the tender shall be treated as incomplete and liable for cancellation. The Bidder shall also comply with Clause 10 of Section I.

1. Bid Declaration Form.
2. Earnest Money Deposit (EMD)
3. Price Schedule (Section-VI)
4. Copy of required documents as per clause 10 in Section-I.
5. ISO 9001 Certificate.
6. Xerox copy of PAN.
7. Attested copy of TIN and sale tax clearance.
8. An undertaking to provide goods and services confirming to vendor specifications.
9. Credentials regarding experience in carrying out order for similar projects in Govt. or other reputed establishments for worth of more than 1 Crore or more in a single order.
10. Copy of purchase orders from Govt., PSU or reputed organizations  
Showing order value for not less than Rupees one Crore in a single order. The bidder has to produce at **least two such orders** during last three consecutive years.
11. A list of important customers in last three years i.e. 2009-10, 2010-11 & 2011-12.
12. Technical literatures and original specifications sheets of each item offered.
13. Details of maintenance and support infrastructure at Bhubaneswar.
14. Manufacture ship /authorized system integrator ship certificate.
15. Attested copy of power of Attorney, if any.
16. Attested copy of partnership Deeds, if any.
17. Check list in respect of Technical Specification.
18. Check list in respect of General Compliance.
19. All other schedules provided in Bid document.
20. Service tax registration certificate for this type of service.

15. Tenderers shall quote for all the items under Section – IV: Schedule of Requirement. Tenders not quoted for all the items shall not be considered.

16. Tenderers are required to submit tenders in the following manner. All the documents/information relating to Part –I i,e Techno-commercial bid & Part – II i.e Price bid shall be placed in separate sealed covers. Both the separate covers duly super scribed as mentioned above i,e Part – I Techno-commercial bid & Part

– II Price bid shall be kept in another sealed cover super scribed as Tender For "**Extension of OGS-WAN**" as per dates specified in Clause- 4 in SECTION – I.

**NOTE:** Schedule of prices in the prescribed Proforma in Section VI shall be placed in the "**Extension of OGS-WAN - Price bid**" envelope. All other documents as mentioned in Clause 14, Section – II shall be placed in the "**Extension of OGS-WAN – Techno-commercial bid**" envelope. Outer envelope should be sealed and super scribed as "**Extension of OGS-WAN**".

17. Conditional offers shall not be accepted.
18.
  - i) Over writing should be avoided.
  - ii) Erasures and other changes shall bear the dated initial of the person signing the tender along with company seal.
  - iii) In the event of discrepancy or arithmetical error in the schedule of price, the decision of the purchaser shall be final and binding on the tenderer.
  - iv) For evaluation the price mentioned in words shall be taken as final, if there is any difference in figure and words in the price bid.

## **SECTION - III**

### **GENERAL CONDITIONS OF CONTRACT (GCC)**

#### **1. SCOPE OF THE CONTRACT:**

The **Scope of work** includes the Supply, Installation, Integration, Testing, Commissioning of the above-mentioned items and integrating the same with WAN of OPTCL **on turnkey basis**. It also includes other associated services viz, training of Purchaser's personnel and annual maintenance contract for a period of three years after expiry of the warranty period for three years defined in the bidding document, in accordance with the enclosed Technical Specification, bill of quantity and render technical services as per delivery schedule.

#### **2. DEFINITION OF TERMS:**

In writing these General Conditions of Contract, the Specification and bill of quantity, the following works shall have the meanings hereby indicated unless there is something in the subject matter or contract in consistent with such constructions.

- 2.1 "The Purchaser" shall mean the ODISHA POWER TRANSMISSION CORPORATION LTD or OPTCL.
- 2.2 "The Engineer" shall mean the engineers appointed by the Purchaser for the purpose of this contract.
- 2.3 "Purchaser's representative" shall mean any person or persons or consulting firm appointed and remunerated by the Purchaser to supervise, inspect, test and examine workmanship and materials of the equipment to be supplied.
- 2.4 "The Contractor" shall mean the Bidder whose bid has been accepted by the Purchaser and shall include the Bidders executions, administrators successors and permitted agencies.
- 2.5 "Equipment" shall mean and include all machineries, apparatus, materials, articles and services to be provided under the contract by the contractor.
- 2.6 "Contract Price" shall mean the sum named in or calculated in accordance with the provisions of the contract as the "contract price" which shall include packing, forwarding freight, Insurance, Excise Duty, Sales Tax, Octroi and other taxes and duties if applicable.
- 2.7 "General Condition" shall mean these General Condition of Contract.
- 2.8 "The Specification" shall mean the specification annexed to or issued with the General Conditions and shall include the schedules and drawings attached thereto as well as all samples and pattern, if any.
- 2.9 "Month" shall mean of calendar month.
- 2.10 "Writing" shall include any manuscript, type written printed or other statement re-produced in any visible form and whether under seal or under hand.

- 2.11 “F.O.R. Destination” costs shall mean the cost of equipment and material at the consignee’s store. The cost is exclusive of Excise Duty, Sales Tax and other local Taxes, but is inclusive of packing, forwarding and insurance & Freight charges.
- 2.12 The “term” contract shall mean & include General Conditions, Specifications, and Schedules, Drawings, form of tender, covering letter, schedule of prices or the final General Condition, any special conditions applying the particular contract, specifications and drawings and agreement to be entered in.
- 2.13 Terms and condition not herein defined shall have the same meaning as are assigned to them in the Indian Contract Act, failing that in the Orissa General Clauses Act.

**3. GUIDELINES FOR THE BIDDER:**

The Contractor shall examine the instructions to tenderers, General Conditions of Contract, Specification, the Schedules of Quantity and delivery and rest of the bidding document to satisfy himself as to all terms and conditions and circumstances affecting the contract price. He shall quote price (s) according to his own allowances except as otherwise provided therein will be levied. The purchaser shall not be responsible for any misunderstanding or incorrect information obtained by the contractor other than information given to the contract in writing by the purchaser.

**4. PATENT RIGHTS ETC:**

Any dispute arising in respect of copy right act for the equipment supplied or software configured by the vendor and used by the purchaser shall be the responsibility of the vendor and the purchaser in no way shall be held responsible in any form or court of law in this regard.

**5. MANNER OF EXECUTION:**

All equipment supplied under the contract shall be manufactured in the manner set out in the specification and to the reasonable satisfaction of the purchaser. All the IT equipment supplied by the contractor shall be new, unused and conforming to relevant standards.

**6. INSPECTIONS AND TESTING**

- 6.1 The Purchaser or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications at no extra cost to the Purchaser. The Purchaser shall notify what inspections and tests the Purchaser requires and where they are to be conducted. The Purchaser shall notify the Supplier in writing, of the identity of any representatives retained for these purposes.
- 6.2 The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at point of dispatch, and/or at the Goods’ final destination. If conducted on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Purchaser.
- 6.3 Should any inspected or tested Goods fail to conform to the Specifications, the Purchaser may reject the Goods, and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.
- 6.4 The Purchaser’s right to inspect, test, and where necessary, reject the Goods after the Goods’ arrival at Project Site shall in no way be limited or waived by reason of the Goods having

previously been inspected, tested, and passed by the Purchaser or its representative prior to the Goods' shipment.

6.4.1 Nothing in GCC Clause 6 shall in any way release the Supplier from any warranty or other obligations under this Contract.

**NOTE:**

The inspection of the Goods shall be carried out to check whether the Goods are in conformity with the technical specifications attached to the contract and shall be in line with the inspection/test procedures laid down in the Technical Specifications and the General Conditions of Contract. Following broad test procedure will generally be followed for inspection and testing of equipment. The supplier will dispatch the Goods to the ultimate consignee after Purchaser's inspection and testing, approval of inspection report and manufacturer's warranty certificate. The Purchaser may again test the equipment after completion of the installation and commissioning at the site of the installation. For site preparation the supplier should furnish all details to the purchaser sufficiently in advance so as to get the works completed before receipt of the equipment. Network components and Power Systems for establishment of LAN at respective offices and operation thereof shall be supplied, installed and commissioned properly by the supplier prior to commencement of performance/acceptance tests.

**7. DESPATCH INSTRUCTIONS:**

The Goods & Services to be delivered in this contract being of turnkey project in nature, the actual dispatch instruction shall be issued on mutual discussions in respect of delivery point, time, stocking mode etc.

**8. DELIVERY & INSTALLATION SCHEDULE:**

- a) Free delivery should be made at the place as specified in the firm's work order.
- b) The delivery period of *the items ordered, as specified, should not exceed 90 days* from the date of receipt of LOI/work order.
- c) *The Installation and commissioning of the items ordered should be completed within 30 days* from the date of delivery.

**9. MANUALS AND DRAWINGS**

- a) Before the goods and equipment are taken over by the Purchaser, the Supplier shall supply operation and maintenance manuals together with drawings of the goods, equipment, and network and computer architecture designs. These shall be in such detail as will enable the Purchaser to operate, maintain, adjust and repair all parts of the equipment as stated in the specifications.
- b) The manuals and drawings shall be in the English language and in such form and numbers as stated in the contract but not exceeding spiral-bound 5(Five) spiral-bound copies.



- b) Unless and otherwise agreed, the goods and services shall not be considered to be completed for the purpose of taking over until such manuals and drawings have been supplied to the Purchaser.

**10. DOCUMENTATION:**

The Supplier shall provide complete and legal documentation of all Services and all networking components. The supplier shall also indemnify the purchaser against any levies/penalties on account of any default in this regard.

**11. ACCEPTANCE TEST:**

The installation and commissioning will be considered as complete only after it passes successfully through the acceptance test.

- (i) The acceptance test will be conducted by the Purchaser, their consultant or any other person nominated by the Purchaser, at its option. The acceptance will involve trouble-free integrated operation of all items of supply for seven consecutive days. There shall not be any additional charges for carrying out acceptance test. No malfunction, partial or complete failure of any part should occur. No missing modules/sections will be allowed. The Supplier shall maintain necessary log in respect of the results of the tests to establish to the entire satisfaction of the Purchaser. An average uptake efficiency of 100% for the duration of test period shall be considered as satisfactory.

- (ii) In the event of the Network components/equipment and Power Systems of the Package failing to pass the acceptance test, a period not exceeding **ten days** will be given to rectify the defects and clear the acceptance test, failing which the Purchaser reserves the rights to get the equipment replaced by the Supplier at no extra cost to the Purchaser.

- (iii) Successful conduct and conclusion of the acceptance tests for the installed goods and equipment and configured services shall also be the sole responsibility and at the cost of the Supplier.

**12. ACCEPTANCE CERTIFICATES:**

- a) On successful completion of acceptability test, receipt of deliverables etc, and after the purchaser is satisfied with the working of the system, the acceptance certificate signed by the supplier and the representative of the purchaser will be issued. The date on which such certificate is signed shall be deemed to be the date of successful commissioning of the systems and services.
- b) The training as per Clause 42 of General Conditions of Contract shall be conducted on the dates mutually agreed upon and within a month from the date of acceptance of supply.

### 13. SUPPLIER'S OBLIGATIONS

- c) The Supplier is obliged to work closely with the Purchaser's staff, act within its own authority and abide by directives issued by the Purchaser during implementation activities.
- d) The Supplier will abide by the job safety measures prevalent in India and will free the Purchaser from all demands or responsibilities arising from accidents or loss of life during installation and commissioning activities. The Supplier will pay all indemnities arising from such incidents and will not hold the Purchaser responsible or obligated.
- e) The Supplier is responsible for managing the activities of its personnel or sub-contracted personnel and will hold itself responsible for any misdemeanors.
- f) The Supplier will treat as confidential all data and information during the execution of his responsibilities and will not reveal such information to any other party without the prior written approval of the Purchaser.

### 14. SITE PREPARATIONS

The Purchaser is solely responsible for providing the storage, installation and commissioning site for the establishment of network components in compliance with the technical and environmental specifications defined by the Supplier. The Purchaser will designate the installation sites before the scheduled installation date to allow the Supplier to perform a site inspection to verify the appropriateness of the sites before the installation of network equipments.

### 15. NETWORKING COMPONENTS & POWER SYSTEMS INSTALLATION

The Supplier is responsible for all unpacking, assemblies, installation, wiring, installations, cabling for networking components and connecting to power supplies. **A 15 AMP switch socket with board along with wiring from the nearest power supply source need to be installed near the network rack.** The Supplier will test all networking components operations and accomplish all adjustments necessary for successful and continuous operation of the networking components.

### 16. CONTRACT'S DEFAULT LIABILITY:

- i) The purchaser may upon written notice of default to the contractor terminate the contract in circumstances detailed hereunder.
  - a) If in the judgement of the purchaser, the contractor fails to make delivery of equipment within the time specified in the contract or within the period for which extension has been granted by the purchaser, to the contractor.
  - b) If in the judgement of the purchaser, the contractor fails to supply with any of the other provisions of this contract.
- ii) In the event purchaser terminates the contract in whole or in parts as provided in Clause-1 Section-I, the purchaser reserves the right to purchase upon such terms and in such a manner as he may deem appropriate, equipment similar to that of terminated and the contractor will be liable to the purchaser for any additional costs for such similar

equipment and/or for penalty for delay as defined in Clause-25 Section –III until such reasonable time as may be required for the final supply of equipment. Execution of contract under such circumstances shall however be on express written willingness of both the parties.

- iii) In the event the purchaser does not terminate the contract as provided in Clause – 16 (i) above, Contractor shall continue the performance of the contract, in which case he shall be liable to the purchaser for penalty for delay as set out in Clause-25 Section –III until the equipment is accepted. Execution of the contract under such circumstances shall however be on express written willingness of both the parties.

**17. REJECTION OF MATERIALS:**

In the event on any of the materials/ equipments supplied by the contractor is found defective in materials or workmanship or otherwise not in conformity with the requirements of the contract specification, the purchaser shall reject the materials/equipments and request the contractor in writing to rectify the same. The contractor on receipt of such notification shall either rectify or replace the defective equipment free of cost to the purchaser. If the contractor fails to do so within 30 days of written notice, the purchaser may

- (i) At its option replace or rectify such defective equipment and recover the extra costs so involved from the contractor and/or
- (ii) Terminate the contract for balance work/supplies, with enforcement of penalty as per contract.
- (i) Acquires the affected equipment/materials and services at reduced price considered equitable under the circumstances.  
The contractor shall not be allowed any extension in contract completion period due to time taken to replenish the rejected material/work.

**18. EXTENSION OF TIME:**

If the delivery of equipment/materials is delayed due to reasons beyond the control of the contractor, the contractor shall without delay give notice to the purchaser in writing of his claim for an extension of time. The purchaser on receipt of such notice may agree to extend the contract delivery date as may be reasonable but without prejudice to other terms and conditions of the contract.

**19. WARRANTY**

- (i) The Supplier warrants that the Goods supplied under the Contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the Contract and all the Services configured shall render trouble free function. The Supplier further warrants that all Goods supplied under this Contract shall have no defect, arising from design, materials, or workmanship (except when the design and/or material is required by the Purchaser's specifications) or from any act or omission of the Supplier, that may develop under normal use of the supplied Goods in the conditions prevailing in the country of final destination.
- (ii) This warranty shall remain valid for thirty-six (36) months after the Goods, inspected 100%, have been delivered, commissioned and accepted at the final destination

indicated in the Contract or 40 months from the date of 100% inspection and delivery whichever is earlier.

**(iii) The free comprehensive support during the warranty period will include the following:**

- a) The vender shall rectify the fault within 24 hours from the time of registration of the call.
- b) System readjustment and/or system changing-over support on occasions of reconfiguration and/or upgrade and extensions if any.
- c) The vendor shall be responsible for any defects that may arise out under normal usage due to faulty materials attached to the system, designing lacuna or poor workmanship. The vendor shall have to take immediate remedial measure for such defects at his own cost when called upon to do so by the Purchaser.
- d) The vendor should also guarantee that the equipment and its accessories supplied are complete and fully compatible in every respect, and conform to technical specifications of design, material and workmanship mentioned in the quotation. The vendor should also guarantee that the equipment and its accessories supplied would perform satisfactorily as per requirements mentioned in the specification.
- e) Any software support like update/enhancement/upgrade etc. Released till the completion of warranty and during Annual Maintenance (if Contracted) shall be supplied, installed and commissioned free of cost by the bidder, irrespective of whether or not OEM charges for the same.
- f) Software support is defined especially as helpdesk, update/enhancement, upgrade, technical guidance on usage of features and functionality, problem solving and troubleshooting. Rectification of bugs, enabling features of the software already provided, providing additional user controlled reports, future product information, migration path details and consultancy.
- g) Any corruption in the Software or media shall be rectified during the full period of the contract including Warranty and AMC, at no extras cost to the OPTCL.
- h) In case of violation of any of the conditions of warranty (for three years). The Composite Bank Guarantee shall be invoked by OPTCL. In case the violation of the condition of warranty is not set right by the vendor, the Composite Bank Guarantee shall be extended beyond three years for which the vendor shall request the banker for the same. The formalities for extension of warranty should be completed well in advance of the expiry of warranty period by the vendor/bidder, otherwise OPTCL will be forced to invoke the said Composite Bank Guarantee.

- (iv)** If any equipment gives continuous trouble, say six times in one month, during the warranty period, the Supplier shall replace the equipment with new equipment without any additional cost to the Purchaser.

- (v) In case, the downtime of a unit exceeds 24 hours and the fault is not rectified or faulty equipment not replaced within stipulated period, a penalty of Rs.300/- per day per faulty non central unit and Rs.1000/- per day per faulty central unit will be charged and will be recovered from the performance guarantee or from any sum thereafter that may become due to the vendor out of this contract or any other contract with OPTCL, Bhubaneswar. 24 hours or part thereof beyond the stipulated downtime shall be counted as a full day for calculation and imposition of penalty. **Units such as Routers, Switches, modems etc which lead to a central point failure in the event of a unit failure, jeopardizing functioning of the Organization's I.T, are treated as central units for this purpose.**
- (ii) The System Integrator shall provide quarterly preventive maintenance to all the equipment of the project during the warranty period.
- In case of the firm fails to conduct the quarterly preventive maintenance of any equipment / component of the project during the warranty period, a penalty of 10% of the AMC amount of equipment for the quarter for the 1<sup>st</sup> year of AMC period mentioned in the tender by the firm shall be levied. The penalty amount shall be deducted from the Composite Bank Guarantee of the firm.

**NOTE:** The penalty will be adjusted from the Composite Bank Guarantee till it exceeds 50% of the guarantee amount at which point, the Chief General Manager (IT), OPTCL reserves the right to cancel the contract. In such cases, the full amount of Composite Bank Guarantee shall be forfeited to the OPTCL.

**20. PRICE:**

- (i) Bidders are requested to quote their FIRM price only for each individual item covered under schedule of requirement. No price variation shall be entertained at any time during the contract period.
- (ii) All prices quoted must be firm and valid for 180 days from the date of opening of the commercial bid.
- (iii) All prices quoted shall not be affected by any escalation in prices of labor or materials, machinery, equipment, etc. or in rupee exchange rate during the price validity period whatsoever. However duties, levies, or taxes in respect of finished products will be at the rate prevalent at the time of delivery and charged rate or actual rate whichever is lower. In cases where the prices offered are included in basic product, the same should be mentioned against all those specific items.
- (iv) The prices shall be FOR Destination only at the consignees store(s) inclusive of packing, forwarding, freight and insurance. In addition, the breakup of destination price shall given as per Schedule of prices in Section - VI.
- (v) Where ever the issue of foreign exchange is involved due to import of materials from a country other than India, the same shall be paid by the vendor. Import License, marine freight, insurance, customs duty, surcharge, port handling and clearing charges etc. all shall be vendors account and purchasers shall not be responsible in any way in this regard. All such costs shall be presumed to have

been included in unit prices under column No.6 of Price Schedule-3 in Section – VI.

**21. IMPORT LICENCE:**

In case imported materials are offered no assistance will be given for Import License or release of Foreign Exchange. The firm should arrange to import materials from their own quota.

**22. VALIDITY:**

Prices and conditions of sale of the offer should be valid for a period of 180 days from the date of opening of the tender. However, the tenderer shall confirm in writing in the tender in this regard, otherwise, must mention his validity period in writing in the tender failing which the tender shall be rejected.

**23. TERMS OF PAYMENT:**

**Payment against Supply of equipment and materials shall be effected as follows:**

**i) Payment of Active Components:**

90% payment with 100 % taxes for Active components shall be made as per actual delivery against inspections, delivery at site and physical verification, subject to production of the following documents:

- Bills in Triplicate along with delivery challan.
- Approved Warranty certificates.
- Joint Verification Certificate

**ii) Payment of Passive Components/Services:**

90% payment with 100 % taxes for passive components **as per actual** delivered/installed shall be made unit wise against delivery, physical verification at site & joint measurement at respective OPTCL field units, subject to production of the following documents:

- Bills in Triplicate.
- Approved Warranty certificates.
- Joint measurement Certificate.

iii) **Balance 10% payment** on product shall be made after successful commissioning, & testing & certificate of acceptance of the turn key project against 10% BG of equivalent amount subject to submission of the following documents:

- Bills in Triplicate.
- Tri-party measurement verification report with respect to actual material installed commissioned and accepted by OPTCL.
- Installation Certificate in respect of Network Active Components
- Network Diagrams in soft and hard copies.

**iv) Other Terms of Payment:**

- (i) No advance payment in any form will be made.
- (ii) Handling of foreign exchange component and customs clearance, if any, must be taken care of by the bidder.

**24. COMPOSITE BANK GUARANTEE :**

A composite Bank Guarantee at the rate of 10% (Ten percent) of the value of the total project shall be furnished from any Nationalised/Scheduled Bank to the Chief General Manager (I.T), OPTCL within 15 (fifteen) days of issue of the purchase order, executed in a non-judicial stamp paper worth of Rs.29/- (Rupees twenty nine) only subject to change as per Orissa Stamp Duty Act valid for a period of 42 (forty two) months from the schedule date of delivery of last lot strictly as per proforma enclosed, towards security, 100% payment and performance guarantee purposes failing which the purchase order will be treated as cancelled. In the event of any breach or default in all or any of the conditions set forth and provided in the purchase order, the purchaser may forfeit the whole amount of the composite bank guarantee. The forfeiture of the composite Bank guarantee shall not in any way effect, limit or extinguish any remedy or relief to which the above authority may at any time be lawfully entitled. No interest will be payable on Composite Bank Guarantee amount.

**25. SERVICE LEVELS AND PENALTIES TOWARDS NON PERFORMANCE**

Delay in execution of any supply order against this tender shall attract penalty. All the computing and communication devices supplied, installed and integrated for LAN under the contract must be up and functioning all the time. Each of the device/component forming part of LAN is referred to as unit. Every unit being integral part, failure of any unit shall also attract penalty.

**i) Penalty**

For delay in execution of the contract beyond the stipulated period, penalty @ 0.5% (half percent) of the contract price for every week of delay or part thereof shall be realized subject to a maximum of 5% of the contract- price.

**ii) Force Majeure Clause**

If at any time, during the continuance of this contract, the performance in whole or in part is delayed by reason of:

- Any war or hostility
- Act of public enemy, civil commotion, sabotage, explosions
- Effect of flood, epidemics, quarantine restrictions, freight Embargoes.
- General strikes, Bandhs
- Acts of God

herein after referred to as EVENT, neither party shall, by reason of such EVENT, be entitled to terminate this Contract, nor shall any party have any claim to the damages against the other in respect of such non-performance or delay in performance – provided that notice of happening, of any such EVENT is given by either party to the other within seven days from date of occurrence of the EVENT.

Expected Services and goods deliverable under this Contract shall resume as soon as practicable after such an EVENT comes to an end or ceases to exist. The decision of the Purchaser as to whether the situation has become normal or not, shall be final and conclusive.

If the performance in whole or part of any obligation under this contract is prevented or delayed by reason of any such EVENT for a period exceeding 60 days, either party may, at their option, terminate this contract.

**26. INSURANCE:**

Insurance of Stores covered by this specification shall be done by the suppliers with their own insurance unless otherwise stated. The responsibility of delivery of the stores at destination in good condition rests with the supplier. Any claim with the Insurance Company or transport agency arising due to loss or damage in transit has to be settled by the supplier. The supplier shall undertake free replacement of materials damaged or lost which will be reported by the consignee within 30 days of receipt of the materials at destination without awaiting for the settlement of their claims with the carriers and underwriters. In case the replacement of damaged item/part is not done within 30 days, the material shall be treated as not delivered and shall attract penalty till replacement as per clause under heading “Rejection of Materials”.

**27. PAYMENT DUE FROM THE CONTRACTOR:**

All costs and damages, for which the contractor is liable to the purchaser, will be deducted by the purchaser from any money due to the contractor under the contract or through the composite Bank Guarantee submitted by him.

**28. JURISDICTION OF THE HIGH COURT OF ODISHA:**

Suits, if any, arising out of this contract shall be filed by either party in a court of law to which the jurisdiction of High Court of Odisha extends.

**29. SALES TAX, INCOME TAX CLEARANCE, BALANCE SHEET AND PROFIT AND LOSS ACCOUNT:**

Sales Tax certificate and PAN should be enclosed with the tender along with Balance Sheet and P&L statement for the three preceding financial years.

**30. CERTIFICATE FOR EXEMPTION FROM EXCISE DUTY:**

Offers with exemption from Excise Duty shall be accompanied with authenticated proof of such exemption. Authenticated proof for this clause shall mean Photostat copy of exemption certificate.



**31. DEVIATION FROM SPECIFICATION:**

It is in the interest of the tenderers to study the specification, drawings etc. specified in the tender schedule thoroughly before tendering so that, if any deviations are made by the tenderers the same are prominently brought out in the body of their tender. A list of deviations shall be enclosed to the Tender. Unless deviations in scope, technical and commercial are specifically mentioned in the list of deviations, it shall be presumed that the tenderer has accepted the conditions in the Tender Specification in toto, not withstanding any exemptions mentioned also elsewhere in the tender.

**32. RIGHT TO REJECT/ACCEPT ANY TENDER:**

The purchaser reserves the right either to reject or to accept any or all tenders. The purchaser has exclusive right to alter the quantities of materials at the time of placing final purchase order. After placing of the order the purchaser may defer the delivery of the materials. It may be clearly understood by the tenderer that the purchaser need not assign any reason for the above action.

**33. CONTRACTOR'S RESPONSIBILITY:**

Notwithstanding anything mentioned in the specification or subsequent approval or acceptance of the purchaser, the ultimate responsibility for design of materials and satisfactory performance shall rest with the tenderers.

**34. EVALUATION OF BIDS:**

In comparing bids and in making awards the purchaser may consider such factors as compliance with specifications, relative quantity, land adaptability of supplies or services, experience, financial soundness, records of integrity in dealings, performance of materials/equipments earlier supplied, utility to furnish repairs and maintenance services, the time of delivery, capability to perform including available facilities such as adequate shops, plants, equipment and technical organization. All costs incidental to execution of the Turn Key Project shall be taken into consideration in addition to the above for evaluation of offers.

**35. MINIMUM QUALIFICATION CRITERIA OF BIDDERS:**

All the prospective bidders are requested to note that their bids can only be considered for evaluation only if they fulfill all the required criteria mentioned in the General Information to Bidders in the tender. Bidders, who do not fulfill these criteria, need not submit their bids.

**36. LANGUAGE AND MEASURES:**

All documents pertaining to the contract including specifications, schedule, notices, correspondences, operating and maintenance instructions, drawings or any other writing shall be written in English language. The metric system of measurement shall be used exclusively in this contract.

**37. CORRESPONDENCES:**

- (i) Any notice to the contractor under the terms of the contract shall be served by Registered mail or by hand at the contractor's principal place of business.
- (ii) Any notice to the purchaser shall be served at the OPTCL's principal office in the same manner.

**38. LEGAL ADDRESS OF THE PARTIES:**

The address of the parties to the contract shall be specified.

**PURCHASER:**

Chief General Manager (IT), Orissa Power Transmission Corporation Ltd.  
3rd Floor, OPTCL Corporate building, Janapath,  
Bhubaneswar – 751 022, Orissa, India

**CONTRACTOR:**

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**39. OUT RIGHT REJECTION OF TENDERS:**

Tenders shall be rejected if they are not complying with the following requirements:

1. Tenderer should have purchased the specification from the office of the purchaser or if down loaded from OPTCL's web site, must have submitted the tender paper cost as per the instruction under clause-5 in the Section-I for "Notice Inviting Tenders".
2. Tenders shall be submitted in person or by Regd. Post with A.D or by Speed Post.
3. Tenders shall not be submitted telegraphically or by Fax.
4. Tenders shall be accompanied by the prescribed earnest money deposit.
5. Tenders shall be kept valid for a period of 180 days from the date of opening of tender.
6. Tenders shall be submitted in two parts only.
7. Tenders shall be accompanied by a list of major supplies effected in the last three (3) years prior to the date of opening of tender.
8. The tender shall be accompanied by PAN, TIN, Photostat copy of latest Sales Tax clearance certificates. Normally such certificates should have been issued for the year 2011-12.
9. The schedule of prices should be filled up fully carefully to indicate the break-up of prices including taxes and duties. (Section – VI).
10. Tenderers shall fulfill the minimum criteria as laid down under clause 10.6 under Section-I.

**40. COPY RIGHT PROTECTION OF TENDER DOCUMENT:**

The contractor shall treat the details of the Specification and other Tender documents as private and confidential and they shall not be reproduced without written authorization from the purchaser.

**41. POST WARRANTY MAINTENANCE:**

- i. The System Integrator shall provide post warranty maintenance soon after the warranty period is over for a period of three years.
- ii. A Bank Guarantee of 2% of the cost of the total project (excluding Annual Maintenance Charges) shall be furnished from any Nationalised / Scheduled Bank to Chief. General Manager (I.T), OPTCL, Bhubaneswar before completion of the

warranty period executed in a non-judicial stamp paper worth of Rs. 29/- (Rupees Twenty nine) only subject to change as per Orissa Stamp Duty Act. Valid for a period of 37 (Thirty Seven) months from the date of commencement of AMC period. No interest will be payable on the Bank Guarantee.

- iii. The annual maintenance charges shall be paid in quarterly installments at the end of each quarter.
- iv. The firm has to conduct quarterly preventive maintenance of each equipment/component of the project. In case of the firm fails to conduct the quarterly preventive maintenance of any equipment /component of the project, a penalty of 10% of the AMC charges of the equipment for the quarter shall be deducted from the AMC charges.
- v. The compressive warranty support & penalties on downtime thereof shall be applicable as specified under the Clause: 19 WARRANTY mentioned above.
- vi. The Purchaser reserves the right to terminate the maintenance and repairs contract, after the warranty period, at any time without assigning any reasons and the Supplier cannot claim any compensation in this respect.

**SECTION - IV**  
**Schedule of Requirements (SOR)**

The purchaser's quantity requirement of the materials covered under the schedule is as indicated below.

**Network Components**

Serial No	Description	Unit of Measurement	Quantity
1	Access Router	Nos	2
2	Layer-3 24 Port Switch 10/100/1000 Mbps Network Managed Switch with 1 FX SFP Slots.	Nos	4
3	Layer-2 48 Port 10/100/1000 Mbps Network Managed Switch with 1 FX SFP Slots.	Nos	6
4	Layer-2 8 Port 10/100/1000 Mbps Network Managed Switch with 1 FX SFP Slots.	Nos	25
5	12U Double Section wall Mounted Network Rack	Nos.	29
6	CAT6 UTP cable (1 Box=305 meter)	Box	99
7	Dual Face Plate Information Outlet with Back Box	Nos	465
8	I/O for work area side	Nos	930
9	I/O for patch panel	Nos	930
10	48 Port Patch Panel(unloaded)	Nos.	12
11	24 Port Patch Panel(unloaded)	Nos.	26
12	CAT6 Patch Cord (3ft)	Nos	666
13	CAT6 Patch Cord (7ft) for user end	Nos	465
14	PVC Pipe with internal diameter of 20mm and min. thickness 2 mm	Mtrs.	4580
<b>Fibre Componenets</b>			
1	FOC om3 MM	Mtrs	6850
2	LIU unloaded	Nos	54
3	SC MM Connector	Nos	324
4	6 port connector panel with SC coupler	Nos	54
5	FOC Patch Cord 10 ft MM SC-LC	Nos	54
6	HDPE Conduit	Mtrs.	6850
7	GLC Fibre Module	Nos	54

**Services Components**

Serial No	Description	Unit of Measurement	Quantity
1	Laying of CAT6 Cable with concealing of PVC Pipe along with back box	Mtrs.	4580
2	Installation of Rack	Nos	29
3	Termination of I/O	Nos	1860
4	Laying of Fibre Optic with digging of soil, refiling of soil and laying of conduit	Mtrs.	6850
5	Fixing of LIU	Nos	54
6	Termination of FO Cable	Nos	324
7	Earthing	Nos	29
8	Design, Drawing, Documentation	Nos	8

**Note:** Tender evaluation will be made on the basis of the quantity specified as above. Payment for the items will be made on actual.

## SECTION – V

### Technical Specifications

#### Access Router

The Router shall have following specifications / features:

S. No.	Generic Requirements
<b>1</b>	<b>General requirements</b>
1.1	Router should have chassis based & modular architecture with multicore processor for scalability and should be a single box configuration for ease of management.
1.2	Should have zone based firewall and IPS features
1.3	Should have integrated USB port and flash to provide storage for configuration/image
1.4	Should have USB based and RJ-45 based console port. Should have auxiliary port for management
1.5	Should have external redundant power supply support
<b>2.</b>	<b>Hardware and interface requirements</b>
2.1	Routers should have at least 512 MB DRAM and 256 MB Flash upgradable to 2 GB
2.2	Routers should have at least 3 open slots for LAN/ WAN modules after providing asked interfaces
2.3	Routers should support large selective of modular LAN and WAN connectivity options including Gigabit Ethernet and Fast Ethernet, T1/E1, Channelized T1/E1, V.35/G.703 Serial, 3G Wireless(Both HSPA and CDMA) interface modules.
2.4	Should have extensive debugging capabilities to assist in hardware for problem resolution
2.5	Should have hardware assisted acceleration for both IPSec and SSL VPN.
<b>3</b>	<b>Performance Requirements</b>
3.1	The router should have a minimum performance of 300 Kpps for 64 byte packets
3.2	The router should have a minimum forwarding performance of 70 Mbps with IPSec and firewall features enabled
3.3	Should support other IP Services like GRE tunneling, IPSec tunneling, IPv4 and IPv6 tunnelling
3.4	Should support bandwidth optimization and application acceleration capabilities for WAN links
<b>4</b>	<b>Quality of Service (QoS) requirements</b>

4.2	Routers should have traffic marking, policing and shaping features
4.3	Routers should have Voice traffic optimization with features like WRED, H-QoS, RSVP and priority queuing.
<b>5</b>	<b>Routing protocol support</b>
5.1	Router should have protocols: IPv4, IPv6, VRRP, Static Routes, RIPv1, RIPv2, OSPF, IS-IS, BGP, Policy based routing
<b>6.</b>	<b>IPv4 Multicast features</b>
6.1	Router should support protocols: IGMP v1/v2/v3, IGMP Snooping, PIM-DM/SSM, PIM-SM
<b>7.</b>	<b>System Management and Administration</b>
7.1	Routers should have Configuration rollback feature
7.2	Should have ability to network traffic accounting, usage-based network billing, network planning, security, Denial of Service monitoring capabilities and network monitoring.
7.3	Should support extensive support for SLA monitoring for metrics like delay, latency, jitter, packet loss, RTP-Based VoIP traffic, CRTP
7.4	Routers should have software upgradation facility via FTP/TFTP whenever software upgrade is required
7.5	Routers should have SNMPv2 and SNMPv3 features
<b>8</b>	<b>Security features</b>
8.1	Routers should have AAA authentication facility using RADIUS and TACACS+
8.2	Routers should have Packet Filters like: Standard ACL, Extended ACL, ACL that can match arbitrary bits of packet bits of a packet at an arbitrary depth in the packet header and payload
8.3	Routers should have DES, 3DES, AES encryption
8.4	Routers should have MD5 authentication
8.5	Routers should have generation of SNMP traps and syslog facility
8.6	Routers should have Network address translation (NAT)
8.7	Router should be minimum common criteria EAL4 certified
<b>9</b>	<b>Built-in troubleshooting</b>
9.1	Should have extensive debugs on all protocols
9.2	Should have Secure Shell (SSHv2) for secure connectivity
9.3	Should have to support Out of band management through Console and an external modem for remote management
9.4	Should have pre-planned scheduled reboot facility

9.5	Should support Real Time Performance Monitor – service-level agreement verification probes/alerts
<b>10</b>	<b>Minimum Configuration deliverable</b>
10.1	Should have minimum 3 10/100/1000 Base-T WAN ports with additional 2 Nos. of V.35/G.703 ports with necessary connecting cables

### **EDGE SWITCH (48 PORT)**

The switches shall have following specifications / features:

<b>S. No.</b>	<b>Description</b>
1.1	Switch should be 1 RU rack mountable with external redundant power supply support
1.2	Should have minimum 13.6 Gbps forwarding bandwidth
1.3	Should have minimum 10.1 Mpps forwarding rate
1.5	Should support hot swappable 1000 Base-SX, 1000 Base-LX/LH, 1000 Base-ZX modules
1.6	In case of power supply failure, redundant power supply should be able to handle the complete load
1.7	Switch should support IEEE Standards of Ethernet: IEEE 802.1d, 802.1s, 802.1w, 802.3ad, 802.3x, 802.1D, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z etc.
1.8	Should have IEEE 802.1Q VLAN encapsulation and up to 250 active VLANs per switch
1.9	Should have Secure VTP with MD5 or equivalent to reduce administrative burden of configuring VLANs on multiple switches in turn eliminating the configuration errors & troubleshooting in secure manner
1.10	Should be able to discover the neighboring device of the same vendor giving the details about the platform, IP Address, Link connected through etc, thus helping in troubleshooting connectivity problems
1.11	Should have a mechanism to detect connectivity issues with both fiber and copper cabling. Ensures that a partially failed link is shut down on both sides, to avoid L2/L3 protocol convergence issues
1.12	Should have extensive debugging including layer 2 debugging and layer 2 trace route for troubleshooting
1.13	Should have Time Domain Reflectometry (TDR) feature for detecting cable breaks and shorts
1.14	Should have L2 convergence features like MSTP, RSTP, PVST etc.
1.15	Switch ports should automatically detects the type of device connected and offers a best-practices configuration to the ports
1.16	Should have capability to response for SLA monitoring for metrics like delay, latency, jitter,

	packet loss
1.17	Should have minimum 8000 MAC Address support
1.18	Should have DiffServ / TOS Marking & Policing
1.19	Should have at least 4 Queues to differentiate and prioritize different applications (Voice / Video / Data)
1.20	Should have IGMP v1, v2 and v3 and IGMP Snooping features
1.21	Should have multicast VLAN registration (MVR) feature
1.22	Should have unicast, multicast and broadcast storm control
1.23	Should have IEEE 802.1x to allow dynamic, port-based security, providing user authentication
1.24	Should have MAC Address Based Security on per port basis.
1.25	Should have IEEE 802.1x feature with ACLs, Dynamic VLAN assignment, Web Authentication, multi domain authentication and MAC authentication bypass
1.26	Should have IEEE 802.1x feature with voice VLAN permits an IP phone to access the voice VLAN
1.27	Should have IEEE 802.1x feature with an ACL assignment for specific identity-based security policies
1.28	Should have Port-based, VLAN-based and Time-based access-list to allow application of security policies on individual switch ports
1.29	Should have the capability to display and clear MAC address information in MAC Address Table
1.30	Should have unicast MAC filtering feature to prevents the forwarding of any type of packet with a matching MAC address.
1.31	Should have SSHv2 , SNMPv3 and NTP features to provide network security
1.32	Should have TACACS+ and RADIUS support for AAA authentication
1.33	Should be able to shut down Spanning Tree Protocol PortFast-enabled interfaces when BPDUs are received to avoid accidental topology loops
1.34	Should be able to prevent edge devices not in the network administrator's control from becoming Spanning Tree Protocol root nodes
1.35	Should have DHCP snooping feature to allow administrators to ensure consistent mapping of IP to MAC addresses.
1.36	Should have multilevel security options on console access to prevent unauthorized users from altering the switch configuration
1.37	Should have 4 Groups of RMON I support



1.38	Should have Port Mirroring feature based on port basis / vlan basis
1.39	Should have support for Ipv6 addressing, ICMPv6, TCP/UDP over Ipv6, HTTP over Ipv6, HTTPS over Ipv6, SNMP over Ipv6, Syslog over Ipv6 etc.
1.40	Management: Should have accessibility using Telnet, SSH, CLI for easier software upgrade through network using TFTP and configuration management
1.41	Switch should be minimum common criteria EAL2 certified
1.42	<b>Minimum Configuration deliverable</b>
	Should have minimum 48 10/100 Base-T ports with additional 2 Nos. of SFP Based ports populated with minimum 2 nos. 1G SFP modules for MMF.

### **EDGE SWITCH (24 PORT)**

The switches shall have following specifications / features:

<b>S. No.</b>	<b>Description</b>
1.1	Switch should be 1 RU rack mountable with external redundant power supply support
1.2	Should have minimum 8.8 Gbps forwarding bandwidth
1.3	Should have minimum 6.5 Mpps forwarding rate
1.5	Should support hot swappable 1000 Base-SX, 1000 Base-LX/LH, 1000 Base-ZX modules
1.6	In case of power supply failure, redundant power supply should be able to handle the complete load
1.7	Switch should support IEEE Standards of Ethernet: IEEE 802.1d, 802.1s, 802.1w, 802.3ad, 802.3x, 802.1D, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z etc.
1.8	Should have IEEE 802.1Q VLAN encapsulation and up to 250 active VLANs per switch
1.9	Should have Secure VTP with MD5 or equivalent to reduce administrative burden of configuring VLANs on multiple switches in turn eliminating the configuration errors & troubleshooting in secure manner
1.10	Should be able to discover the neighboring device of the same vendor giving the details about the platform, IP Address, Link connected through etc, thus helping in troubleshooting connectivity problems
1.11	Should have a mechanism to detect connectivity issues with both fiber and copper cabling. Ensures that a partially failed link is shut down on both sides, to avoid L2/L3 protocol convergence issues
1.12	Should have extensive debugging including layer 2 debugging and layer 2 trace route for troubleshooting
1.13	Should have Time Domain Reflectometry (TDR) feature for detecting cable breaks and shorts

1.14	Should have L2 convergence features like MSTP, RSTP, PVST etc.
1.15	Switch ports should automatically detects the type of device connected and offers a best-practices configuration to the ports
1.16	Should have capability to response for SLA monitoring for metrics like delay, latency, jitter, packet loss
1.17	Should have minimum 8000 MAC Address support
1.18	Should have DiffServ / TOS Marking & Policing
1.19	Should have at least 4 Queues to differentiate and prioritize different applications (Voice / Video / Data)
1.20	Should have IGMP v1, v2 and v3 and IGMP Snooping features
1.21	Should have multicast VLAN registration (MVR) feature
1.22	Should have unicast, multicast and broadcast storm control
1.23	Should have IEEE 802.1x to allow dynamic, port-based security, providing user authentication
1.24	Should have MAC Address Based Security on per port basis.
1.25	Should have IEEE 802.1x feature with ACLs, Dynamic VLAN assignment, Web Authentication, multi domain authentication and MAC authentication bypass
1.26	Should have IEEE 802.1x feature with voice VLAN permits an IP phone to access the voice VLAN
1.27	Should have IEEE 802.1x feature with an ACL assignment for specific identity-based security policies
1.28	Should have Port-based, VLAN-based and Time-based access-list to allow application of security policies on individual switch ports
1.29	Should have the capability to display and clear MAC address information in MAC Address Table
1.30	Should have unicast MAC filtering feature to prevents the forwarding of any type of packet with a matching MAC address.
1.31	Should have SSHv2 , SNMPv3 and NTP features to provide network security
1.32	Should have TACACS+ and RADIUS support for AAA authentication
1.33	Should be able to shut down Spanning Tree Protocol PortFast-enabled interfaces when BPDUs are received to avoid accidental topology loops
1.34	Should be able to prevent edge devices not in the network administrator's control from becoming Spanning Tree Protocol root nodes
1.35	Should have DHCP snooping feature to allow administrators to ensure consistent mapping of

	IP to MAC addresses.
1.36	Should have multilevel security options on console access to prevent unauthorized users from altering the switch configuration
1.37	Should have 4 Groups of RMON I support
1.38	Should have Port Mirroring feature based on port basis / vlan basis
1.39	Should have support for Ipv6 addressing, ICMPv6, TCP/UDP over Ipv6, HTTP over Ipv6, HTTPS over Ipv6, SNMP over Ipv6, Syslog over Ipv6 etc.
1.40	Management: Should have accessibility using Telnet, SSH, CLI for easier software upgrade through network using TFTP and configuration management
1.41	Switch should be minimum common criteria EAL2 certified
1.42	<b>Minimum Configuration deliverable</b>
	Should have minimum 24 10/100 Base-T ports with additional 2 Nos. of SPF Based ports populated with minimum 2 nos. 1G SFP modules for MMF.

#### **ACCESS SWITCH (8 PORT)**

The switches shall have following specifications / features:

<b>S. No.</b>	<b>Description</b>
1.1	Switch should be 1 RU rack/wall mountable
1.2	Should have minimum 3.6 Gbps forwarding bandwidth
1.3	Should have minimum 2.7 Mpps forwarding rate
1.5	Should support hot swappable 1000 Base-SX, 1000 Base-LX/LH, 1000 Base-ZX modules
1.7	Switch should support IEEE Standards of Ethernet: IEEE 802.1d, 802.1s, 802.1w, 802.3ad, 802.3x, 802.1D, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z etc.
1.8	Should have IEEE 802.1Q VLAN encapsulation and up to 250 active VLANs per switch
1.9	Should have Secure VTP with MD5 or equivalent to reduce administrative burden of configuring VLANs on multiple switches in turn eliminating the configuration errors & troubleshooting in secure manner
1.10	Should be able to discover the neighboring device of the same vendor giving the details about the platform, IP Address, Link connected through etc, thus helping in troubleshooting connectivity problems
1.11	Should have a mechanism to detect connectivity issues with both fiber and copper cabling. Ensures that a partially failed link is shut down on both sides, to avoid L2/L3 protocol convergence issues
1.12	Should have extensive debugging including layer 2 debugging and layer 2 trace route for

	troubleshooting
1.13	Should have Time Domain Reflectometry (TDR) feature for detecting cable breaks and shorts
1.14	Should have L2 convergence features like MSTP, RSTP, PVST etc.
1.15	Switch ports should automatically detects the type of device connected and offers a best-practices configuration to the ports
1.16	Should have capability to response for SLA monitoring for metrics like delay, latency, jitter, packet loss
1.17	Should have minimum 8000 MAC Address support
1.18	Should have DiffServ / TOS Marking & Policing
1.19	Should have at least 4 Queues to differentiate and prioritize different applications (Voice / Video / Data)
1.20	Should have IGMP v1, v2 and v3 and IGMP Snooping features
1.21	Should have multicast VLAN registration (MVR) feature
1.22	Should have unicast, multicast and broadcast storm control
1.23	Should have IEEE 802.1x to allow dynamic, port-based security, providing user authentication
1.24	Should have MAC Address Based Security on per port basis.
1.25	Should have IEEE 802.1x feature with ACLs, Dynamic VLAN assignment, Web Authentication, multi domain authentication and MAC authentication bypass
1.26	Should have IEEE 802.1x feature with voice VLAN permits an IP phone to access the voice VLAN
1.27	Should have IEEE 802.1x feature with an ACL assignment for specific identity-based security policies
1.28	Should have Port-based, VLAN-based and Time-based access-list to allow application of security policies on individual switch ports
1.29	Should have the capability to display and clear MAC address information in MAC Address Table
1.30	Should have unicast MAC filtering feature to prevents the forwarding of any type of packet with a matching MAC address.
1.31	Should have SSHv2 , SNMPv3 and NTP features to provide network security
1.32	Should have TACACS+ and RADIUS support for AAA authentication
1.33	Should be able to shut down Spanning Tree Protocol PortFast-enabled interfaces when BPDUs are received to avoid accidental topology loops

1.34	Should be able to prevent edge devices not in the network administrator's control from becoming Spanning Tree Protocol root nodes
1.35	Should have DHCP snooping feature to allow administrators to ensure consistent mapping of IP to MAC addresses.
1.36	Should have multilevel security options on console access to prevent unauthorized users from altering the switch configuration
1.37	Should have 4 Groups of RMON I support
1.38	Should have Port Mirroring feature based on port basis / vlan basis
1.39	Should have support for Ipv6 addressing, ICMPv6, TCP/UDP over Ipv6, HTTP over Ipv6, HTTPS over Ipv6, SNMP over Ipv6, Syslog over Ipv6 etc.
1.40	Management: Should have accessibility using Telnet, SSH, CLI for easier software upgrade through network using TFTP and configuration management
1.41	Switch should be minimum common criteria EAL2 certified
1.42	<b>Minimum Configuration deliverable</b>
	Should have minimum 8 10/100 Base-T ports with additional 1 Nos. of SPF Based ports populated with minimum 1 nos. 1G SFP modules for MMF.

#### GENERAL TECHNICAL SPECIFICATION FOR UTP CABLING SYSTEM:

Sr No.	Details	Specification
1	<b>Type</b>	Unshielded twisted pair cabling system, Certificate by Intertek (ETL) for the 4-Connectors channel testing to the Cat 6 Cabling system as per the ANSI/TIA 568 C.2 & as well as the ISO 11801 standards up to 600 MHz.
2	<b>Networks Supported</b>	10 / 100/1000 Ethernet, 155 Mbps ATM, 1000 Mbps IEEE 802.3ab Ethernet, and proposed Cat 6 Gigabit Ethernet
3	<b>TIA / EIA 568 C.2</b>	ETL Verified / UL Listed
4	<b>Warranty</b>	<b>25 year systems warranty; Warranty to cover Bandwidth of the specified and installed cabling system, and the installation costs</b>
5	<b>Performance characteristics to be provided along with bid</b>	(a) Attenuation, Pair-to-pair and PS NEXT, ELFEXT and PSELFEXT, Return Loss, ACR and PS ACR for 4-connector channel
		(b) 4-Connectors channel testing to the Cat 6 Cabling system as per the ANSI/TIA 568 C.2 & as well as the ISO 11801 standards up to 600 MHz, tested by ETL.
		(c) Should have a PSNEXT margin of 7.5 dB over CAT6
		(d) CAT6 cabling system should be tested and verified by the Independent third party laboratories for Zero BER (Bit Error Rate) testing at the data transmission speed of 1 Gbit/s.

### CATEGORY 6, UTP CABLE

Sr No.	Details	Specification
1	Type	Unshielded Twisted Pair, Category 6, TIA / EIA 568-C.2 & ISO/IEC 11801
2	Conductors	<b>23 AWG solid bare copper</b>
3	Insulation	Polyethylene
4	Jacket	<b>Flame Retardant PVC</b>
	Pair Separator	Cross-member (+) fluted Spline.
5	Approvals	<b>(a) UL Listed / UL Verified. UL hologram mark to be present on packaging.</b> <b>(b) ETL verified to TIA / EIA Cat 6. ETL compliance certificate to be produced for CAT6 Cable.</b>
6	Operating temperature	-20 Deg. C to +60 Deg. C
	Storage Temperature	-20 Deg. C to +80 Deg. C
7	Frequency tested up to	<b>Minimum 600 MHz; ETL report to be provided for 600 MHz performance.</b>
8	Packing	Box of 305 meters
9	Cable Outer Diameter	.23 inches
10	Delay Skew	45ns MAX.
11	Bend Radius	4 * Cable Diameter
12	Impedance	<b>100 Ohms + / - 15 ohms, 1 to 600 MHz.</b>
13	UL/NEC Ratings	CMR Rated
14	Mutual Capacitance	5.6 NF MAX /100 Mtr.
15	Conductor Resistance	66.58 Ohms Max / KM
16	Propagation Delay	536 ns/100 Mtrs. MAX @ 250 Mhz
17	Performance characteristics @ 250 MHz	<b>Attenuation: 32.8dB/100m</b> <b>NEXT : 44dB</b> <b>PS NEXT : 41dB</b> <b>ELFEXT : 23dB</b> <b>PSELFEXT : 19dB</b> <b>Return Loss: 25.3dB</b> <b>ACR : 11.3dB</b>
18	ROHS Compliant	ROHS/ELV Compliant

### CAT-6 UTP JACKS

Sr No.	Details	Specification
1	Type	PCB based, Unshielded Twisted Pair, Category 6, TIA /EIA 568-C.2 and ISO/IEC 11801
2	Modular Jack	750 mating cycles
3	Re-termination	<b>Each jacks should have min 200 termination cycles without performance degradation.</b>
4	Accessories	<b>Must have integrated bend-limiting strain-relief unit for cable entry</b> Support cable pair termination process on the jacks at 90 degree angle. <b>Bidder should have a mechanism to maintain the quality of the termination ir-respective of the skill level of the termination staff. Bidder should be able to demonstrate the technology is so required by the client.</b>
5	Housing	Polyphenylene oxide, 94V-0 rated.
6	110 Blocks	polycarbonate, 94V-0 rated

7	<b>Jack contacts</b>	Beryllium copper, plated with 1.27 mm [.000050] thick gold in localized area and 3.81 mm [.000150] minimum thick tin-lead in solder area over 1.27 mm [.000050] minimum thick nickel under plate
8	<b>Wiring blocks</b>	Polycarbonate, 94V-0 rated
9	<b>Approvals</b>	<b>(a) UL Listed / CSA Approved</b> <b>(b) ETL verified to TIA / EIA Cat 6. ETL compliance certificate to be produced for CAT6 Jack.</b>
10	<b>Performance characteristics @ 250 MHz</b>	Insertion Loss : 0.10dB : 47.9dB Return Loss : 46dB NEXT : 40.1dB FEXT
11	<b>ROHS Compliant</b>	ROHS/ELV Compliant
12	<b>Color</b>	Jacks should be available in more than 10 colors.

#### UNLOADED JACK PANELS 24 / 48 PORT

Sr No.	Details	Specification
1	<b>Type</b>	<b>24-port, Modular, 1U, Jack Panel, Unloaded capable of accepting UTP, STP jacks and fiber connectors</b>
	<b>Type</b>	<b>48-port, Modular, 2U, Jack Panel, Unloaded capable of accepting UTP, STP jacks and fiber connectors</b>
2	<b>Port arrangement</b>	Configured as 6 Port blank Module with individually replaceable CAT-6 Jacks
3	<b>Circuit Identification</b>	Front of each module shall be capable of accepting 9 mm to 12 mm labels
4	<b>Port Identification</b>	9mm or 12mm Labels on each of 24-ports (to be included in supply)
5	<b>Panel</b>	<b>Black, powder coated steel</b>
6	<b>Approvals</b>	<b>UL listed / ETL Verified</b>
7	<b>ROHS Compliant</b>	ROHS/ELV Compliant

#### CAT6 UTP PATCH CORDS (3FT/7FT)

Sr No.	Details	Specification
1	<b>Type</b>	Unshielded Twisted Pair, Category 6, TIA / EIA 568-C.2 & ISO/IEC 11801
2	<b>Conductor</b>	24 AWG 7 / 32, stranded copper conductors 100 Ohm
3	<b>Length</b>	4 feet, 7 feet
4	<b>Plug Protection</b>	<b>Transparent Slim boot</b>
5	<b>Jacket</b>	<b>Flame Retardant PVC</b>
6	<b>Warranty</b>	<b>25-year component</b>
7	<b>UL Listing</b>	CMR Rated
8	<b>ROHS Compliant</b>	ROHS/ELV Compliant

#### FACE PLATE

Sr No.	Details	Specification
1	<b>Type</b>	<b>Single Gang shuttered style, 86 x 86 mm</b>
2	<b>Material</b>	ABS
3	<b>No. of ports</b>	Two
4	<b>ROHS Compliant</b>	ROHS/ELV Compliant

## SPECIFICATION FOR FIBER COMPONENTS:

### 6 Fiber MM Outdoor armored Cable

Sr No.	Specifications	Requirement
1	Cable Type	6-core, Multimode, 10G Ethernet OM3, Armored, loose-tube, Gel Filled
2	Fiber type	50/125/250, Laser Grade, primary coated buffers
3	No. of cores	6
4	Standard	Compliant to EN 50173; ISO 11801; ANSI/TIA-568-C.3 and Telcordia GR-409
5	Cable Construction	BELLCORE GR 20 / IEC 794-1
6	Fiber Attenuation	
	@850nm	<=2.7 dB / KM
	@1300nm	<=0.7dB / KM
7	Bandwidth	
	@850nm	>1500 MHz-KM
	@1300nm	>500 MHz-KM
8	Network Support	
	@850nm (1000Base-SX)	1000m
	@1300nm (1000Base-LX)	6000m
	@850nm (10GBase-SR & SW)	300m
	@1300nm (10GBase-LX4)	300m
9	Loose Tube construction	Single PBTP loose tube of min diameter of 3mm filled with water blocking gel.
10	Outer Sheath	HDPE
11	Overall Diameter	10 mm
12	Strength members	Water blocking E glass yarns
13	Min Bend radius - Installation	200 mm
14	Min Bend radius – Service	160 mm
15	Tensile rating	1250 N
16	Maximum Crush resistance	3000N
17	Operating Temperature	-20 Degree C to +70 Degree C
18	Weight	67 Kg/Km

### Fiber Optic Rack mount LIU

Sr No.	Specification	Requirement
1	Fiber Optic shelf	19" rackmountable, unloaded
2	Capacity	1U: 6/12/24 Fiber terminations
3	Connector type	Shall accept snap in type pre loaded adapter plates of 6 or 12 fibers. Shall be compatible with all connector types.
4	Material	Powder coated steel



5	<b>Drawer shelf feature</b>	Easy access to back side of connector
6	<b>Adapter plates</b>	Adapter plates loaded with duplex type couplers SC MM, for 6 fiber shall be provided along with fiber LIU. All blank slots in the fiber LIU must be blocked for rodent / dirt entry into fiber LIU.
6	<b>Warranty</b>	25 year warranty
7	<b>Compliance</b>	ROHS / ELV Compliant

### SC Connector Multimode OM3

Sr No.	Specifications	Requirement
1	<b>Make and Type</b>	SC-Style Connectors, Multimode, Simplex, , OM3
2	<b>Connector Housing</b>	PBT – GF 17, Color : Beige
3	<b>Plug Body</b>	PES – GF20, Color : Beige
4	<b>Spring</b>	Stainless Steel
5	<b>Ferrule Assembly</b>	Ceramic/PBT – GF 17, Color : Beige
6	<b>Retainer Body</b>	PES – GF20, Color : Beige
7	<b>Crimp Eyelet</b>	Tin Plated Copper
8	<b>Boot</b>	TPE, Color : Aqua
9	<b>Protective Cover</b>	LDPE, Color : Black, NON - FR
		UL 94 V-0 Rated

### SC to LC Patch Cord MM

Sr No.	Specifications	Requirement
1	<b>Make and Type</b>	SC to LC Duplex Fiber Optic Patch Cord 3 Mtr 50/125 Micron OM3
2	<b>Cable Sheath</b>	LSZH
3	<b>Cable Diameter</b>	1.8 mm twin zip
4	<b>Ferrule</b>	Ceramic
5	<b>Buffer</b>	.6 mm easy strip
6	<b>Insertion Loss</b>	MAX .3 db
7	<b>Return Loss</b>	> 30 db
8	<b>Temperature Range</b>	Minus -10 Degree C to +60 Degree C
9	<b>ROHS</b>	ROHS/ELV Compliant

## 12U Network Rack.

Sl.No	Items Specifications	Requirement
1	Features	12U Double Section Wall Mount Rack (600mm W x 500mm D), Rigid welded frame Adjustable 19" rails at the front, Hardware Packet, International Standard, Robust Frame Structure With Top & Bottom cable entry provision, Fully powder coated.
2	Load Rating	20 Kgs minimum
3		Rear wall-mounted section Rear wall-mounted section hinged to the front section
4		Glass Doors Tinted Front Glass Door With Lock & Key
5	Size	i. Height 12U ii. Width 600mm iii. Depth 500mm
6	Fan Tray	1U Fan Tray with 2 Fan Positions
7	Cooling Fans	2 cooling Fans
8	Cable Management	1U Cable Manager
9		Earth Continuity Kit
10		AC Mains Channel 6Port ACDB with 5/15AMP socket Indian style.

### Earthing Specification.

Supply and installation of special type dedicated electrolyte copper plate of 2ft X 2ft X 3mm, GI Pipe 38 mm size (ISI make), filling of char coal, salt and addition of graphite and gel. Supplying laying under grounding of copper of size 3 mm wire from earth pit of 1 Met X 1 Met X 3 Met to the extended from top of earth pit up to the earth bar installed near by the Network Rack with concealing work. The earth resistance need to be in the range of 0 to 1 ohms.

## Installation Specifications

### UTP Cabling Installation Specifications

#### Telecommunications Outlet & Horizontal cross connect Installation

- a) Cables shall be coiled in the surface-mount boxes if adequate space is present to house the cable coil without exceeding the manufacturer's bend radius. No more than 12" of slack shall be stored.
- b) In addition, each cable type shall be terminated as indicated below:
  - i) Cables shall be dressed and terminated in accordance with the recommendations made in the TIA/EIA-568-B document, manufacturer's recommendations and/or best industry practices.
  - ii) Pair untwist at the termination shall not exceed one-half an inch for Enhanced Category 6 connecting hardware.
  - iii) Bend radius of the cable in the termination area shall not be less than 4 times the outside diameter of the cable.

- iv) The cable jacket shall be maintained as close as possible to the termination point.
- v) Cables shall be neatly bundled and dressed to their respective panels or blocks. Each panel or block shall be fed by an individual bundle separated and dressed back to the point of cable entrance into the rack or frame.
- vi) Each cable shall be clearly labeled on the cable jacket behind the patch panel at a location that can be viewed without removing the bundle support ties. Cables labeled within the bundle, where the label is obscured from view shall not be acceptable.

### **Horizontal Distribution Cable & Installation**

- a) Cable shall be installed in accordance with manufacturer's recommendations and best industry practices.
- b) Cable raceways shall not be filled greater than the manufacturer recommended guidelines.
- c) Cables shall be installed in continuous lengths from origin to destination (no splices).
- d) The cable's minimum bend radius and maximum pulling tension shall not be exceeded.
- e) Horizontal distribution cables shall be bundled into groups of not greater than 40 cables. Cable bundle quantities in excess of 40 cables may cause deformation of the bottom cables within the bundle.
- f) Cables shall not be attached to ceiling grid or lighting support wires.
- g) Any cable damaged or exceeding recommended installation parameters during installation shall be replaced by the contractor prior to final acceptance at no cost to the OPTCL.
- h) A self-adhesive label or PVC marker ferrules shall identify the Cables. A cable label shall be applied to the cable behind the faceplate on a section of cable that can be accessed by removing the cover plate. Similar label or marker ferrules shall also be placed on a section of the cable near to the patch panel termination.
- i) Unshielded twisted pair cable shall be installed so that there are no bends less than four times the cables outside diameter (4 X cable Outside diameter) at any point in the run.
- j) Pulling tension on 4-pair UTP cables shall not exceed 25-pounds for a single cable or cable bundle. The pathway shall be adequately sized so as not to exceed the 80% cross-section fill of cables. The pathway shall be securely installed in the facility.

### **Installation acceptance Testing Specifications**

Installed UTP Cabling System shall be tested with TIA / EIA 568 Level IIE / Level III hand held testers. Each installed UTP drop shall be tested as per the latest revisions of TIA / EIA 568-B.1 Cat 5e specifications. Length, Wire Map, Attenuation, Pair-to-pair and Power Sum NEXT, ELFEXT and PS ELFEXT, Return Loss, Delay Skew, ACR and PS ACR shall be tested and results provided to OPCB in soft format on a CD.

### **Warranty Specifications**

OPTCL seeks warranty for the installed cable plant from the OEM equipment supplier. Bidder shall ensure that the OEM norms for supply, installation, testing and documentation as specified by the OEM supplier shall be adhered to, provided those are in line with TIA / EIA standards and OPTCL requirement specifications. The warranty shall be provided by the OEM vendor to OPTCL and shall be administered in India. The duration of the warranty shall be for a minimum of 25 years and shall cover the system

performance, application assurance and the costs of the supply of components and installation. A Sample Warranty certificate shall be provided by the bidder along with the bid.

### **Documentation Specifications**

The successful bidder shall after completion of the installation, submit a detailed documentation of the cable plant. The documentation shall cover, in the minimum, the following

- a) As-built diagrams of the Network, with building and floor wise distribution of users and connectivity.
- b) Test results for UTP links.
- c) Consolidated BOM with manufacturer's part Nos. and quantities used.
- d) Warranty certificate from OEM supplier.

**Extension of OPTCL-GRIDCO-SLDC Wide Area Network (OGS-WAN)**

**BID FORM**

To:

Chief General Manager (IT),  
Odisha Power Transmission Corporation Limited  
3<sup>rd</sup> Floor, IT wing, Corporate Building, Janpath,  
Bhubaneswar- 751 022

Ladies and/or Gentlemen,

Having examined the bidding documents, including Addenda Nos. .... (insert numbers), the receipt of which is hereby acknowledged, we, the undersigned, offer to supply and deliver the equipment, accessories & associated services under the Package “**Extension of OPTCL-GRIDCO-SLDC Wide Area Network (OGS-WAN)**” in conformity with the said Bidding Documents for the sum of \_\_\_\_\_ (Total Bid Amount in Words and Figures) or such other sums as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this Bid.

We undertake, if our bid is accepted, to deliver the Goods in accordance with in the stipulated delivery period as mentioned in the Bidding Documents.

If our bid is accepted, we will obtain the guarantee of a bank in a sum equivalent to 10% (ten percent) of the Contract Price for the due performance of the Contract, in the form prescribed by the Purchaser.

We agree to abide by this bid for a period of 180 days from the date fixed for bid opening under Clause - 4 “General Instruction to Bidders”, and it shall remain binding upon us and may be accepted by you at any time before the expiration of that period.

Until a formal contract is prepared and executed between us, this bid, together with your written acceptance thereof and your Notification of Award, shall constitute a binding Contract between us.

We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely “Prevention of Corruption Act 1988”.

We understand that you are not bound to accept the lowest or any bid you may receive.

Dated this.....day of .....200.....

Signature ..... in the capacity of

..... duly authorised to sign for and on behalf of

(IN BLOCK LETTERS) .....

**MANUFACTURER'S AUTHORISATION FORM**

[See Clause 9 (d) of the General Information to Bidders.]

No. \_\_\_\_\_  
Dated \_\_\_\_\_

To:

Chief General Manager (IT),  
Odisha Power Transmission Corporation Limited  
3<sup>rd</sup> Floor, IT wing, Corporate Building, Janpath,  
Bhubaneswar- 751 022  
**Odisha, INDIA**

IFB No. \_\_\_\_\_

Dear Sir,

We [ *name of the Manufacturer* ] who are established and reputable manufacturers of [ *name and/or description of the goods* ] having factories at [ *address of factory* ] do hereby authorise [ *name and address of Agent* ] to submit a bid, and subsequently negotiate and sign the Contract with you for the goods manufactured by us against the above IFB.

We hereby extend our full guarantee and warranty as per Clause 19 of the General Conditions of Contract for the goods and services offered for supply by the above firm against this Invitation for Bids (IFB).

\_\_\_\_\_  
[Signature for and on behalf of Manufacturer]

[Name]

[Name of the Manufacturer]

**Note:** This letter of authority should be on the letterhead of the Manufacturer and should be signed by a person competent and having the power of attorney to bind the Manufacturer. It should be included by the Bidder in its bid.

## Extension of OPTCL-GRIDCO-SLDC Wide Area Network (OGS-WAN)

### Price Schedule For Goods

Bidder's Name & Address :

### PRICE BID FOR NETWORK COMPONENTS :

Sl. No.	2 Description	3 Country of Origin	4 Unit of measurement (UOM)	5 Qty. (nos.)	6 Unit Price ex-works/ex-warehouse/ex-showroom/off the self	7 Excise duty, if any	8 Packing and forwarding charges	9 Unit cost of Inland transportation, insurance and other local costs incidental to delivery to final destination(s) (F and I)	10 Sales taxes payable, if Contract is awarded	11 Entry Tax	12 Anything Applicable tax, duties and levies please specify	13 Unit Price Col. (6+7+8+9+10+11+12)	14 Total Price ( 5 x 12 )
<b>1. Network Components</b>													
1	Access Router		Nos	2									
2	Layer-3 24 Port Switch 10/100/1000 Mbps Network Managed Switch with 1 FX SFP Slots.		Nos	4									
3	Layer-2 48 Port 10/100/1000 Mbps Network Managed Switch with 1 FX SFP Slots.		Nos	6									
4	Layer-2 8 Port 10/100/1000 Mbps Network Managed Switch with 1 FX SFP Slots.		Nos	25									
5	12U Double Section wall Mounted Network Rack		Nos	29									
6	CAT6 UTP cable (1 Bundle=305 meter)		Box	99									
7	Dual Face Plate Information Outlet with Back Box		Nos	465									
8	I/O for work area side		Nos	930									
9	I/O for patch panel		Nos	930									
10	48 Port Patch Panel(unloaded)		Nos	12									
11	24 Port Patch Panel(unloaded)		Nos	26									
12	CAT6 Patch Cord (3ft)		Nos	666									

13	CAT6 Patch Cord (7ft) for user end		Nos	465										
14	PVC Pipe with internal diameter of 20mm and min. thickness 2 mm		Mtrs	4580										
<b>2.Fibre Components</b>														
15	FOC om3 MM		Mtrs	6850										
16	LIU unloaded		Nos	54										
17	SC MM Connector		Nos	324										
18	6 port connector panel with SC coupler		Nos	54										
19	FOC Patch Cord 10 ft MM SC-LC		Nos	54										
20	HDPE Conduit		Mtrs.	6850										
21	GLC Fibre Module		Nos	54										
											<b>Sub Total 2 (Sum of items 1 to 21)</b>			

**Signature of Bidder with Official Seal**



**PRICE BID FOR NETWORK SERVICE COMPONENTS :**

1	2	3	4	5	12
Sl. No.	Description	Unit of Measurement	Qty. (nos.)	Unit Price without taxes	Total Price (Col. 4 x 5)
<b>3. Network Services Components</b>					
1	Laying of CAT6 Cable with conceiling of PVC Pipe along with back box	Mtrs.	4580		
2	Installation of Rack	Nos	29		
3	Termination of I/O	Nos	1860		
4	Laying of Fibre Optic with digging of soil, refiling of soil and laying of conduit	Mtrs.	6850		
5	Fixing of LIU	Nos	54		
6	Termination of FO Cable	Nos	324		
7	Earthing	Nos	29		
8	Design, Drawing, Documentation	Nos	8		

**NB: Service tax should not be included in the price quoted, the same will be paid extra as per actual**

**Signature of Bidder with Official Seal**

**PRICE BID FOR POST WARRANTY 3(THREE) YEARS ANNUAL MAINTENANCE CONTRACT :**

Sl. No.	Description	Quantity	AMC Price for 1st Year (In Rs.) Excluding Taxes		AMC Price for 2nd Year (In Rs.) Excluding Taxes		AMC Price for 3rd Year (In Rs.) Excluding Taxes	
			Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price
<b>Network Components</b>								
			<b>Total for 1<sup>st</sup> year(1)</b>		<b>Total for 2nd year(2)</b>		<b>Total for 3<sup>rd</sup> year(3)</b>	
			<b>Sub Total 5 {for 3 years(1+2+3)}</b>					
<b>Grand Total {Sub Total 1+ Sub Total 2+ Sub Total 3 + Sub Total 4+ Sub Total 5}</b>								

**NB: Service tax should not be included in the price quoted, the same will be paid extra as per actual.**

Date:

(Signature) .....

Place:

(Printed Name) .....

(Designation) .....

(Common Seal) .....

**Note:**

- (1) In case of discrepancy between unit price and total, the unit price shall prevail.
- (2) Continuation sheets of like size and format may be used as per the Bidder's requirement and shall be annexed to this schedule.
- (3) @ The price shall include all custom duties, sales and other taxes already paid or payable on the components and raw materials used in the manufacture or assembly of the item, or the custom duties and other taxes paid on previously imported item offered ex-warehouse, ex-showroom, or off-the-shelf. These factors should not be entered separately.

**Extension of OPTCL-GRIDCO-SLDC Wide Area Network (OGS-WAN)  
(Qualifying Requirement Data)**

**Bidder's Name & Address:**

In accordance with **the Clause 10.0 of Section-I “General Information to Bidders” and Clause 14.0 of Section-II “Instructions to Bidders”**, we are furnishing the following details/documents in support of Qualifying requirement for the package.

**1.0** Attached copies of original documents defining:

- (a) The constitution or legal status;
- (b) The place of registration and principal place of business;
- (c) Written power of attorney of the signatory of the bid to commit the Bidder.

**2.0** Attached copies of original agreements:

- (a) Signed so as to legally bind all partners, jointly and severally; and
- (b) Submitted with a joint venture agreement providing the joint and several liabilities that of all partners in the event the Contract is awarded to us.

**3.0** Attached copies of original letter of authority to seek reference from our banks.

**4.0 General Information**

All individual firms bidding for the package are requested to complete the information in this form. Nationality information to be provided for all owners or Bidders who are partnerships or individually owned firms.

Where the Bidder proposes to use named subcontractors for critical components of the works, or for work contents in excess of 10 percent of the bid price, the following information should also be supplied for the specialist subcontractor(s).

1.	Name of firm	
2.	Head office address .....	
3.	Telephone.	Contact
4.	Fax	Telex
5.	Place of incorporation/registration	Year of incorporation/registration

<b>Nationality of owners</b>		
	Name	Nationality
1.		
2.		
3.		

**5.0 Capability Statement**

1.	Name of Bidder				
2.	Classifications (1) Manufacturer (2) Authorized Agent (3) Dealer (4) Others (please specify)				
3.	Factory/Works: (a) Location (b) Description, Type and size of building (c) Is property on lease or free hold? If on lease, indicate date of expiry of lease in such case (d) Details of plant and facilities for manufacture/assembly of the goods				
4.	Type of equipment manufactured and supplied during last three years.				
	Name of equipment	Capacity/Size	Nos. manufactured	Nos. of orders on hand	
5.	Types of equipment supplied during last three years other than those covered under 4 above.				
	Name of equipment	Capacity, size & model	Name of Manufacturers & country of origin	Total nos. supplied in India	Nos. on orders on hand

**Capability Statement (contd.)**

6.	Turnover for similar equipment sold in last three years (in Indian Rupees)			
7.	<p>Details of Testing facilities available</p> <p>a) List testing equipment available</p> <p>b) Give details of tests, which can be carried out on items offered.</p> <p>c) Details of testing organization available</p>			
8.	Personnel/Organization: (Give Organization chart for following indicating clearly the Nos. of employees at various levels)			
	<p>1. Quality Assurance</p> <p>2. Production</p> <p>3. Marketing</p> <p>4. Service</p> <p>5. Spare parts</p> <p>6. Administrative</p>			
9.	<p>Nearest service centres to each of the destination installations:</p> <p style="text-align: right;">Location:</p> <p style="text-align: right;">Phone No.:</p> <p style="text-align: right;">Year of Establishment:</p>			
10.	<p>Details of Organization at Service Centre</p> <p>a) No. of skilled employees:</p> <p>b) No. of Unskilled employees:</p> <p>c) No. of Engineering employees</p> <p>d) No. of Administrative employees</p> <p>e) List of special repair/workshop facilities available</p> <p>f) Storage space for spare parts (sq. m.)</p> <p>g) Value of minimum stock of spares available at all the service centres in respective currency</p> <p>h) Value of the modes/types by number of equipment serviced by the centre in last two years</p>			
11.	Names of three buyers to whom similar equipment was supplied in the past and to whom reference may be made by the Purchaser regarding the Bidder's technical and delivery ability.			
	(1)			
	(2)			
	(3)			

**6.0 Financial Capabilities**

Name of Bidder:
-----------------

Bidders shall provide financial information to demonstrate that they meet the requirements stated in the Instructions to Bidders. Each Bidder must fill in this form. If necessary, use separate sheets to provide complete banker information. A copy of the audited balance sheets should be attached.

Name of Banker	
Address of Banker	
Telephone No. Fax No. Contact Name & Title	

Summarise actual assets and liabilities in Indian Rupees for the previous three years. Based upon known commitments, summarise projected assets and liabilities in Indian Rupees for the next three years.

Financial information in Indian Rupees	Actual : Previous three years			Projected : next three years		
	1	2	3	4	5	6
1. Total assets						
2. Current assets						
3. Total liabilities						
4. Current liabilities						
5. Profits before taxes						
6. Profits after taxes						

Specify proposed sources of financing to meet the cash flow demands of the Project, net of current commitments

Source of financing	Amount (Indian Rupees)
1.	
2.	
3.	

Attach audited financial statements for the last three years.





**8.0 Performance Statement (for a period of last three years for all the type of items offered)**

Sl. No.	Order placed by (full address of Purchaser)	Order No. and date	Description and quantity of ordered equipment	Value of order	Date of completion of delivery As per contract	Date of completion of delivery as per Actual	Remarks indicating reasons for late delivery, if any.	Balance qty., if any, to be supplied	Expected date of Commencement completion of balance supplies	Has the equipment been satisfactorily functioning? Attach certificate from the Purchaser/ Consignee

Date :

(Signature) .....

Place :

(Printed Name) .....

(Designation) .....

(Common Seal) .....

**9.0 Details of Service Support**

		<b>SERVICE CENTRE AT BHUBANESWAR</b>							
		Location							
Pack. No.	Destination	Phone no.	Fax No.	Status of Office Working Days and Hours	Number of Software Engineers	Number of Hardware Engineers	Number of Hardware Staff	Value of Min. Stock Available at all times	List of Similar Projects serviced in last two (2) years

Date :

(Signature) .....

Place :

(Printed Name) .....

(Designation) .....

(Common Seal) .....

**Extension of OPTCL-GRIDCO-SLDC Wide Area Network (OGS-WAN)  
(DEVIATIONS AND ALTERNATIVES)**

The Bidder shall itemise any alternatives and deviations from the bid document included in his Bid. Each item shall be listed below with the following information:

Any proposal in this section will be applicable only for the bidders whose Bid will be substantially responsive in accordance with **Clause 5 of Section-II “Instructions to Bidders”**.

A Bid determined as not substantially responsive will be rejected and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

1. Reference Clause in the bid document.
2. Detailed description of the alternative or deviation.
3. Reason for the change.
4. The change in bid price if the alternative or deviation is withdrawn and the bidder conforms to the specifications.

Date: (Signature) .....

Place: (Printed Name) .....

(Designation) .....

(Common Seal) .....

**Extension of OPTCL-GRIDCO-SLDC Wide Area Network (OGS-WAN)  
(FORM OF CERTIFICATE OF ORIGIN AND ELIGIBILITY)**

**Bidder's Name & Address**

I (We) hereby certify that the equipment and materials to be supplied are produced in  
....., an Eligible Source Country.

I (We) hereby certify that my (our) company is incorporated and registered in  
....., an Eligible Source Country.

Date: (Signature) .....

Place: (Printed Name) .....

(Designation) .....

(Common Seal) .....

## Technical Compliance

### Access Router

S. No.	Generic Requirement Description	Bidder's Response Yes/No	Remarks
<b>1</b>	<b>General requirements</b>		
1.1	Router should have chassis based & modular architecture with multicore processor for scalability and should be a single box configuration for ease of management.		
1.2	Should have zone based firewall and IPS features		
1.3	Should have integrated USB port and flash to provide storage for configuration/image		
1.4	Should have USB based and RJ-45 based console port. Should have auxiliary port for management		
1.5	Should have external redundant power supply support		
<b>2.</b>	<b>Hardware and interface requirements</b>		
2.1	Routers should have at least 512 MB DRAM and 256 MB Flash upgradable to 2 GB		
2.2	Routers should have at least 3 open slots for LAN/ WAN modules after providing asked interfaces		
2.3	Routers should support large selective of modular LAN and WAN connectivity options including Gigabit Ethernet and Fast Ethernet, T1/E1, Channelized T1/E1, V.35/G.703 Serial, 3G Wireless(Both HSPA and CDMA) interface modules.		
2.4	Should have extensive debugging capabilities to assist in hardware for problem resolution		
2.5	Should have hardware assisted acceleration for both IPSec and SSL VPN.		
<b>3</b>	<b>Performance Requirements</b>		
3.1	The router should have a minimum performance of 300 Kpps for 64 byte packets		
3.2	The router should have a minimum forwarding performance of 70 Mbps with IPSec and firewall features enabled		
3.3	Should support other IP Services like GRE tunneling, IPSec tunneling, IPv4 and IPv6 tunnelling		
3.4	Should support bandwidth optimization and application acceleration capabilities for WAN links		
<b>4</b>	<b>Quality of Service (QoS) requirements</b>		
4.2	Routers should have traffic marking, policing and shaping features		
4.3	Routers should have Voice traffic optimization with features like WRED, H-QoS, RSVP and priority queuing.		
<b>5</b>	<b>Routing protocol support</b>		
5.1	Router should have protocols: IPv4, IPv6, VRRP, Static Routes, RIPv1, RIPv2, OSPF, IS-IS, BGP, Policy based routing		
<b>6.</b>	<b>IPv4 Multicast features</b>		

6.1	Router should support protocols: IGMP v1/v2/v3, IGMP Snooping, PIM-DM/SSM, PIM-SM		
<b>7.</b>	<b>System Management and Administration</b>		
7.1	Routers should have Configuration rollback feature		
7.2	Should have ability to network traffic accounting, usage-based network billing, network planning, security, Denial of Service monitoring capabilities and network monitoring.		
7.3	Should support extensive support for SLA monitoring for metrics like delay, latency, jitter, packet loss, RTP-Based VoIP traffic, CRTP		
7.4	Routers should have software upgradation facility via FTP/TFTP whenever software upgrade is required		
7.5	Routers should have SNMPv2 and SNMPv3 features		
<b>8</b>	<b>Security features</b>		
8.1	Routers should have AAA authentication facility using RADIUS and TACACS+		
8.2	Routers should have Packet Filters like: Standard ACL, Extended ACL, ACL that can match arbitrary bits of packet bits of a packet at an arbitrary depth in the packet header and payload		
8.3	Routers should have DES, 3DES, AES encryption		
8.4	Routers should have MD5 authentication		
8.5	Routers should have generation of SNMP traps and syslog facility		
8.6	Routers should have Network address translation (NAT)		
8.7	Router should be minimum common criteria EAL4 certified		
<b>9</b>	<b>Built-in troubleshooting</b>		
9.1	Should have extensive debugs on all protocols		
9.2	Should have Secure Shell (SSHv2) for secure connectivity		
9.3	Should have to support Out of band management through Console and an external modem for remote management		
9.4	Should have pre-planned scheduled reboot facility		
9.5	Should support Real Time Performance Monitor – service-level agreement verification probes/alerts		
<b>10</b>	<b>Minimum Configuration deliverable</b>		
10.1	Should have minimum 3 10/100/1000 Base-T WAN ports with additional 2 Nos. of V.35/G.703 ports with necessary connecting cables		

**EDGE SWITCH (48 PORT)**

S. No.	Generic Requirement Description	Bidder's Response Yes/No	Remarks
1.1	Switch should be 1 RU rack mountable with external redundant power supply support		
1.2	Should have minimum 13.6 Gbps forwarding bandwidth		
1.3	Should have minimum 10.1 Mpps forwarding rate		
1.5	Should support hot swappable 1000 Base-SX, 1000 Base-LX/LH, 1000 Base-ZX modules		
1.6	In case of power supply failure, redundant power supply should be able to handle the complete load		
1.7	Switch should support IEEE Standards of Ethernet: IEEE 802.1d, 802.1s, 802.1w, 802.3ad, 802.3x, 802.1D, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z etc.		
1.8	Should have IEEE 802.1Q VLAN encapsulation and up to 250 active VLANs per switch		
1.9	Should have Secure VTP with MD5 or equivalent to reduce administrative burden of configuring VLANs on multiple switches in turn eliminating the configuration errors & troubleshooting in secure manner		
1.10	Should be able to discover the neighboring device of the same vendor giving the details about the platform, IP Address, Link connected through etc, thus helping in troubleshooting connectivity problems		
1.11	Should have a mechanism to detect connectivity issues with both fiber and copper cabling. Ensures that a partially failed link is shut down on both sides, to avoid L2/L3 protocol convergence issues		
1.12	Should have extensive debugging including layer 2 debugging and layer 2 trace route for troubleshooting		
1.13	Should have Time Domain Reflectometry (TDR) feature for detecting cable breaks and shorts		
1.14	Should have L2 convergence features like MSTP, RSTP, PVST etc.		
1.15	Switch ports should automatically detects the type of device connected and offers a best-practices configuration to the ports		
1.16	Should have capability to response for SLA monitoring for metrics like delay, latency, jitter, packet loss		
1.17	Should have minimum 8000 MAC Address support		
1.18	Should have DiffServ / TOS Marking & Policing		
1.19	Should have at least 4 Queues to differentiate and prioritize different applications (Voice / Video / Data)		
1.20	Should have IGMP v1, v2 and v3 and IGMP Snooping features		
1.21	Should have multicast VLAN registration (MVR) feature		
1.22	Should have unicast, multicast and broadcast storm control		
1.23	Should have IEEE 802.1x to allow dynamic, port-based security, providing user authentication		
1.24	Should have MAC Address Based Security on per port basis.		
1.25	Should have IEEE 802.1x feature with ACLs, Dynamic VLAN assignment, Web Authentication, multi domain authentication and MAC authentication bypass		
1.26	Should have IEEE 802.1x feature with voice VLAN permits an IP phone to access the voice VLAN		
1.27	Should have IEEE 802.1x feature with an ACL assignment for		

	specific identity-based security policies		
1.28	Should have Port-based, VLAN-based and Time-based access-list to allow application of security policies on individual switch ports		
1.29	Should have the capability to display and clear MAC address information in MAC Address Table		
1.30	Should have unicast MAC filtering feature to prevents the forwarding of any type of packet with a matching MAC address.		
1.31	Should have SSHv2 , SNMPv3 and NTP features to provide network security		
1.32	Should have TACACS+ and RADIUS support for AAA authentication		
1.33	Should be able to shut down Spanning Tree Protocol PortFast-enabled interfaces when BPDUs are received to avoid accidental topology loops		
1.34	Should be able to prevent edge devices not in the network administrator's control from becoming Spanning Tree Protocol root nodes		
1.35	Should have DHCP snooping feature to allow administrators to ensure consistent mapping of IP to MAC addresses.		
1.36	Should have multilevel security options on console access to prevent unauthorized users from altering the switch configuration		
1.37	Should have 4 Groups of RMON I support		
1.38	Should have Port Mirroring feature based on port basis / vlan basis		
1.39	Should have support for Ipv6 addressing, ICMPv6, TCP/UDP over Ipv6, HTTP over Ipv6, HTTPS over Ipv6, SNMP over Ipv6, Syslog over Ipv6 etc.		
1.40	Management: Should have accessibility using Telnet, SSH, CLI for easier software upgrade through network using TFTP and configuration management		
1.41	Switch should be minimum common criteria EAL2 certified		
1.42	Minimum Configuration deliverable		
	Should have minimum 48 10/100 Base-T ports with additional 2 Nos. of SFP Based ports populated with minimum 2 nos. 1G SFP modules for MMF.		

### EDGE SWITCH (24 PORT)

S. No.	Generic Requirement Description	Bidder's Response Yes/No	Remarks
1.1	Switch should be 1 RU rack mountable with external redundant power supply support		
1.2	Should have minimum 8.8 Gbps forwarding bandwidth		
1.3	Should have minimum 6.5 Mpps forwarding rate		
1.5	Should support hot swappable 1000 Base-SX, 1000 Base-LX/LH, 1000 Base-ZX modules		
1.6	In case of power supply failure, redundant power supply should be able to handle the complete load		
1.7	Switch should support IEEE Standards of Ethernet: IEEE 802.1d, 802.1s, 802.1w, 802.3ad, 802.3x, 802.1D, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z etc.		



1.8	Should have IEEE 802.1Q VLAN encapsulation and up to 250 active VLANs per switch		
1.9	Should have Secure VTP with MD5 or equivalent to reduce administrative burden of configuring VLANs on multiple switches in turn eliminating the configuration errors & troubleshooting in secure manner		
1.10	Should be able to discover the neighboring device of the same vendor giving the details about the platform, IP Address, Link connected through etc, thus helping in troubleshooting connectivity problems		
1.11	Should have a mechanism to detect connectivity issues with both fiber and copper cabling. Ensures that a partially failed link is shut down on both sides, to avoid L2/L3 protocol convergence issues		
1.12	Should have extensive debugging including layer 2 debugging and layer 2 trace route for troubleshooting		
1.13	Should have Time Domain Reflectometry (TDR) feature for detecting cable breaks and shorts		
1.14	Should have L2 convergence features like MSTP, RSTP, PVST etc.		
1.15	Switch ports should automatically detects the type of device connected and offers a best-practices configuration to the ports		
1.16	Should have capability to response for SLA monitoring for metrics like delay, latency, jitter, packet loss		
1.17	Should have minimum 8000 MAC Address support		
1.18	Should have DiffServ / TOS Marking & Policing		
1.19	Should have at least 4 Queues to differentiate and prioritize different applications (Voice / Video / Data)		
1.20	Should have IGMP v1, v2 and v3 and IGMP Snooping features		
1.21	Should have multicast VLAN registration (MVR) feature		
1.22	Should have unicast, multicast and broadcast storm control		
1.23	Should have IEEE 802.1x to allow dynamic, port-based security, providing user authentication		
1.24	Should have MAC Address Based Security on per port basis.		
1.25	Should have IEEE 802.1x feature with ACLs, Dynamic VLAN assignment, Web Authentication, multi domain authentication and MAC authentication bypass		
1.26	Should have IEEE 802.1x feature with voice VLAN permits an IP phone to access the voice VLAN		
1.27	Should have IEEE 802.1x feature with an ACL assignment for specific identity-based security policies		
1.28	Should have Port-based, VLAN-based and Time-based access-list to allow application of security policies on individual switch ports		
1.29	Should have the capability to display and clear MAC address information in MAC Address Table		
1.30	Should have unicast MAC filtering feature to prevents the forwarding of any type of packet with a matching MAC address.		
1.31	Should have SSHv2 , SNMPv3 and NTP features to provide network security		

1.32	Should have TACACS+ and RADIUS support for AAA authentication		
1.33	Should be able to shut down Spanning Tree Protocol PortFast-enabled interfaces when BPDUs are received to avoid accidental topology loops		
1.34	Should be able to prevent edge devices not in the network administrator's control from becoming Spanning Tree Protocol root nodes		
1.35	Should have DHCP snooping feature to allow administrators to ensure consistent mapping of IP to MAC addresses.		
1.36	Should have multilevel security options on console access to prevent unauthorized users from altering the switch configuration		
1.37	Should have 4 Groups of RMON I support		
1.38	Should have Port Mirroring feature based on port basis / vlan basis		
1.39	Should have support for Ipv6 addressing, ICMPv6, TCP/UDP over Ipv6, HTTP over Ipv6, HTTPS over Ipv6, SNMP over Ipv6, Syslog over Ipv6 etc.		
1.40	Management: Should have accessibility using Telnet, SSH, CLI for easier software upgrade through network using TFTP and configuration management		
1.41	Switch should be minimum common criteria EAL2 certified		
1.42	Minimum Configuration deliverable		
	Should have minimum 24 10/100 Base-T ports with additional 2 Nos. of SFP Based ports populated with minimum 2 nos. 1G SFP modules for MMF.		

#### ACCESS SWITCH (8 PORT)

S. No.	Generic Requirement Description	Bidder's Response Yes/No	Remarks
1.1	Switch should be 1 RU rack/wall mountable		
1.2	Should have minimum 3.6 Gbps forwarding bandwidth		
1.3	Should have minimum 2.7 Mpps forwarding rate		
1.5	Should support hot swappable 1000 Base-SX, 1000 Base-LX/LH, 1000 Base-ZX modules		
1.7	Switch should support IEEE Standards of Ethernet: IEEE 802.1d, 802.1s, 802.1w, 802.3ad, 802.3x, 802.1D, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z etc.		
1.8	Should have IEEE 802.1Q VLAN encapsulation and up to 250 active VLANs per switch		
1.9	Should have Secure VTP with MD5 or equivalent to reduce administrative burden of configuring VLANs on multiple switches in turn eliminating the configuration errors & troubleshooting in secure manner		
1.10	Should be able to discover the neighboring device of the same		

	vendor giving the details about the platform, IP Address, Link connected through etc, thus helping in troubleshooting connectivity problems		
1.11	Should have a mechanism to detect connectivity issues with both fiber and copper cabling. Ensures that a partially failed link is shut down on both sides, to avoid L2/L3 protocol convergence issues		
1.12	Should have extensive debugging including layer 2 debugging and layer 2 trace route for troubleshooting		
1.13	Should have Time Domain Reflectometry (TDR) feature for detecting cable breaks and shorts		
1.14	Should have L2 convergence features like MSTP, RSTP, PVST etc.		
1.15	Switch ports should automatically detects the type of device connected and offers a best-practices configuration to the ports		
1.16	Should have capability to response for SLA monitoring for metrics like delay, latency, jitter, packet loss		
1.17	Should have minimum 8000 MAC Address support		
1.18	Should have DiffServ / TOS Marking & Policing		
1.19	Should have at least 4 Queues to differentiate and prioritize different applications (Voice / Video / Data)		
1.20	Should have IGMP v1, v2 and v3 and IGMP Snooping features		
1.21	Should have multicast VLAN registration (MVR) feature		
1.22	Should have unicast, multicast and broadcast storm control		
1.23	Should have IEEE 802.1x to allow dynamic, port-based security, providing user authentication		
1.24	Should have MAC Address Based Security on per port basis.		
1.25	Should have IEEE 802.1x feature with ACLs, Dynamic VLAN assignment, Web Authentication, multi domain authentication and MAC authentication bypass		
1.26	Should have IEEE 802.1x feature with voice VLAN permits an IP phone to access the voice VLAN		
1.27	Should have IEEE 802.1x feature with an ACL assignment for specific identity-based security policies		
1.28	Should have Port-based, VLAN-based and Time-based access-list to allow application of security policies on individual switch ports		
1.29	Should have the capability to display and clear MAC address information in MAC Address Table		
1.30	Should have unicast MAC filtering feature to prevents the forwarding of any type of packet with a matching MAC address.		
1.31	Should have SSHv2 , SNMPv3 and NTP features to provide network security		
1.32	Should have TACACS+ and RADIUS support for AAA authentication		
1.33	Should be able to shut down Spanning Tree Protocol PortFast-enabled interfaces when BPDUs are received to avoid accidental topology loops		
1.34	Should be able to prevent edge devices not in the network administrator's control from becoming Spanning Tree Protocol root nodes		

1.35	Should have DHCP snooping feature to allow administrators to ensure consistent mapping of IP to MAC addresses.		
1.36	Should have multilevel security options on console access to prevent unauthorized users from altering the switch configuration		
1.37	Should have 4 Groups of RMON I support		
1.38	Should have Port Mirroring feature based on port basis / vlan basis		
1.39	Should have support for Ipv6 addressing, ICMPv6, TCP/UDP over Ipv6, HTTP over Ipv6, HTTPS over Ipv6, SNMP over Ipv6, Syslog over Ipv6 etc.		
1.40	Management: Should have accessibility using Telnet, SSH, CLI for easier software upgrade through network using TFTP and configuration management		
1.41	Switch should be minimum common criteria EAL2 certified		
1.42	Minimum Configuration deliverable		
	Should have minimum 8 10/100 Base-T ports with additional 1 Nos. of SFP Based ports populated with minimum 1 nos. 1G SFP modules for MMF.		

### CATEGORY 6, UTP CABLE

S. No.	Generic Requirements	Description	Bidder's Response Yes/No	Remarks
1	Type	Unshielded Twisted Pair, Category 6, TIA / EIA 568-C.2 & ISO/IEC 11801		
2	Conductors	23 AWG solid bare copper		
3	Insulation	Polyethylene		
4	Jacket	Flame Retardant PVC		
	Pair Separator	Cross-member (+) fluted Spline.		
5	Approvals	(a) UL Listed / UL Verified. UL hologram mark to be present on packaging.		
		(b) ETL verified to TIA / EIA Cat 6. ETL compliance certificate to be produced for CAT6 Cable.		
6	Operating temperature	-20 Deg. C to +60 Deg. C		
	Storage Temperature	-20 Deg. C to +80 Deg. C		
7	Frequency tested up to	Minimum 600 MHz; ETL report to be provided for 600 MHz performance.		
8	Packing	Box of 305 meters		
9	Cable Outer Diameter	.23 inches		
10	Delay Skew	45ns MAX.		
11	Bend Radius	4 * Cable Diameter		
12	Impedance	100 Ohms + / - 15 ohms, 1 to 600 MHz.		
13	UL/NEC Ratings	CMR Rated		
14	Mutual Capacitance	5.6 NF MAX /100 Mtr.		
15	Conductor Resistance	66.58 Ohms Max / KM		

16	Propagation Delay	536 ns/100 Mtrs. MAX @ 250 Mhz		
17	Performance characteristics @ 250 MHz	Attenuation: 32.8dB/100m : 44dB PS NEXT : 41dB ELFEXT : 23dB PSELFEXT : 19dB Return Loss: 25.3dB ACR : 11.3dB		
18	ROHS Compliant	ROHS/ELV Compliant		

### CAT-6 UTP JACKS

S. No.	Generic Requirements	Description	Bidder's Response Yes/No	Remarks
1	Type	PCB based, Unshielded Twisted Pair, Category 6, TIA /EIA 568-C.2 and ISO/IEC 11801		
2	Modular Jack	750 mating cycles		
3	Re-termination	Each jacks should have min 200 termination cycles without performance degradation.		
4	Accessories	Must have integrated bend-limiting strain-relief unit for cable entry		
		Support cable pair termination process on the jacks at 90 degree angle.		
		Bidder should have a mechanism to maintain the quality of the termination ir-respective of the skill level of the termination staff. Bidder should be able to demonstrate the technology is so required by the client.		
5	Housing	Polyphenylene oxide, 94V-0 rated.		
6	110 Blocks	polycarbonate, 94V-0 rated		
7	Jack contacts	Beryllium copper, plated with 1.27 mm [.000050] thick gold in localized area and 3.81 mm [.000150] minimum thick tin-lead in solder area over 1.27 mm [.000050] minimum thick nickel under plate		
8	Wiring blocks	Polycarbonate, 94V-0 rated		
9	Approvals	(a) UL Listed / CSA Approved		
		(b) ETL verified to TIA / EIA Cat 6. ETL compliance certificate to be produced for CAT6 Jack.		
10	Performance characteristics @ 250 MHz	Insertion Loss : 0.10dB NEXT : 47.9dB FEXT : 40.1dB Return Loss : 46dB		
11	ROHS Compliant	ROHS/ELV Compliant		
12	Color	Jacks should be available in more than 10 colors.		

**UNLOADED JACK PANELS 24 / 48 PORT**

<b>S. No.</b>	<b>Generic Requirements</b>	<b>Description</b>	<b>Bidder's Response Yes/No</b>	<b>Remarks</b>
1	Type	24-port, Modular, 1U, Jack Panel, Unloaded capable of accepting UTP, STP jacks and fiber connectors		
	Type	48-port, Modular, 2U, Jack Panel, Unloaded capable of accepting UTP, STP jacks and fiber connectors		
2	Port arrangement	Configured as 6 Port blank Module with individually replaceable CAT-6 Jacks		
3	Circuit Identification	Front of each module shall be capable of accepting 9 mm to 12 mm labels		
4	Port Identification	9mm or 12mm Labels on each of 24-ports (to be included in supply)		
5	Panel	Black, powder coated steel		
6	Approvals	UL listed / ETL Verified		
7	ROHS Compliant	ROHS/ELV Compliant		

**CAT6 UTP PATCH CORDS (3FT/7FT)**

<b>S. No.</b>	<b>Generic Requirements</b>	<b>Description</b>	<b>Bidder's Response Yes/No</b>	<b>Remarks</b>
1	Type	Unshielded Twisted Pair, Category 6, TIA / EIA 568-C.2 & ISO/IEC 11801		
2	Conductor	24 AWG 7 / 32, stranded copper conductors 100 Ohm		
3	Length	4 feet, 7 feet		
4	Plug Protection	Transparent Slim boot		
5	Jacket	Flame Retardant PVC		
6	Warranty	25-year component		
7	UL Listing	CMR Rated		
8	ROHS Compliant	ROHS/ELV Compliant		

**FACE PLATE**

<b>S. No.</b>	<b>Generic Requirements</b>	<b>Description</b>	<b>Bidder's Response Yes/No</b>	<b>Remarks</b>
1	Type	Single Gang shuttered style, 86 x 86 mm		
2	Material	ABS		
3	No. of ports	Two		
4	ROHS Compliant	ROHS/ELV Compliant		

## TECHNICAL COMPLIANCE FOR FIBER COMPONENTS:

### 6 Fiber MM Outdoor armored Cable

S. No.	Generic Requirements	Description	Bidder's Response Yes/No	Remarks
1	Cable Type	6-core, Multimode, 10G Ethernet OM3, Armored, loose-tube, Gel Filled		
2	Fiber type	50/125/250, Laser Grade, primary coated buffers		
3	No. of cores	6		
4	Standard	Compliant to EN 50173; ISO 11801; ANSI/TIA-568-C.3 and Telcordia GR-409		
5	Cable Construction	BELLCORE GR 20 / IEC 794-1		
6	Fiber Attenuation			
	@850nm	<=2.7 dB / KM		
	@1300nm	<=0.7dB / KM		
7	Bandwidth			
	@850nm	>1500 MHz-KM		
	@1300nm	>500 MHz-KM		
8	Network Support			
	@850nm (1000Base-SX)	1000m		
	@1300nm (1000Base-LX)	6000m		
	@850nm (10GBase-SR & SW)	300m		
	@1300nm (10GBase-LX4)	300m		
9	Loose Tube construction	Single PBTP loose tube of min diameter of 3mm filled with water blocking gel.		
10	Outer Sheath	HDPE		
11	Overall Diameter	10 mm		
12	Strength members	Water blocking E glass yarns		
13	Min Bend radius - Installation	200 mm		
14	Min Bend radius - Service	160 mm		
15	Tensile rating	1250 N		
16	Maximum Crush resistance	3000N		
17	Operating Temperature	-20 Degree C to +70 Degree C		
18	Weight	67 Kg/Km		

## Fiber Optic Rack mount LIU

S. No.	Generic Requirements	Description	Bidder's Response Yes/No	Remarks
1	Fiber Optic shelf	19" rackmountable, unloaded		
2	Capacity	1U: 6/12/24 Fiber terminations		
3	Connector type	Shall accept snap in type pre loaded adapter plates of 6 or 12 fibers. Shall be compatible with all connector types.		
4	Material	Powder coated steel		
5	Drawer shelf features	Easy access to back side of connector		
6	Adapter plates	Adapter plates loaded with duplex type couplers SC MM, for 6 fiber shall be provided along with fiber LIU. All blank slots in the fiber LIU must be blocked for rodent / dirt entry into fiber LIU.		
6	Warranty	25 year warranty		
7	Compliance	ROHS / ELV Compliant		

## SC Connector Multimode OM3

S. No.	Generic Requirements	Description	Bidder's Response Yes/No	Remarks
1	Make and Type	SC-Style Connectors, Multimode, Simplex, , OM3		
2	Connector Housing	PBT – GF 17, Color : Beige		
3	Plug Body	PES – GF20, Color : Beige		
4	Spring	Stainless Steel		
5	Ferrule Assembly	Ceramic/PBT – GF 17, Color : Beige		
6	Retainer Body	PES – GF20, Color : Beige		
7	Crimp Eyelet	Tin Plated Copper		
8	Boot	TPE, Color : Aqua		
9	Protective Cover	LDPE, Color : Black, NON - FR		
		UL 94 V-0 Rated		

## SC to LC Patch Cord MM

S. No.	Generic Requirements	Description	Bidder's Response Yes/No	Remarks
1	Make and Type	SC to LC Duplex Fiber Optic Patch Cord 3 Mtr 50/125 Micron OM3		
2	Cable Sheath	LSZH		
3	Cable Diameter	1.8 mm twin zip		
4	Ferrule	Ceramic		
5	Buffer	.6 mm easy strip		
6	Insertion Loss	MAX .3 db		
7	Return Loss	> 30 db		



8	Temperature Range	Minus -10 Degree C to +60 Degree C		
9	ROHS	ROHS/ELV Compliant		

### 12U Network Rack.

Sl.No	Items Specifications	Requirement		
1	Features	12U Double Section Wall Mount Rack (600mm W x 500mm D), Rigid welded frame Adjustable 19" rails at the front, Hardware Packet, International Standard, Robust Frame Structure With Top & Bottom cable entry provision, Fully powder coated.		
2	Load Rating	20 Kgs minimum		
3		Rear wall-mounted section Rear wall-mounted section hinged to the front section		
4		Glass Doors Tinted Front Glass Door With Lock & Key		
5	Size	i. Height 12U ii. Width 600mm iii. Depth 500mm		
6	Fan Tray	1U Fan Tray with 2 Fan Positions		
7	Cooling Fans	2 cooling Fans		
8	Cable Management	1U Cable Manager		
9		Earth Continuity Kit		
10		AC Mains Channel 6Port ACDB with 5/15AMP socket Indian style.		

### General Compliance Schedule

Sl.No.	Item	Vendor's confirmation	Deviation ( if any)
01	General Terms & Conditions	Agreed/Not agreed	
02	EMD/ NSIC/ DGS&D Certificate	Deposited/Not deposited	
03	Latest Income Tax PAN and Sales Tax registration & clearance certificates.	Deposited/Not deposited	
04	Security Deposit	Agreed/Not agreed	
05	Payment Terms	Agreed/Not agreed	
06	Penalty Clause	Agreed/Not agreed	
07	Price Validity	Agreed/Not agreed	
08	Delivery & Installation Schedule	Agreed/Not agreed	
09	Warranty (3 years) & Post Installation clause	Agreed/Not agreed	
10	Minimum of 1 year onsite management of Network components.	Agreed/Not agreed	
11	Infrastructure of Bhubaneswar (for Installation and attendance of support calls)	Exist/Does not Exist	
12	Training and Documentation	Agreed/Not agreed	
13	AMC support for min. 3 years after the expiry of Warranty Period of 3 years.	Agreed/Not agreed	
14	Credentials with documentary support as per Eligibility Clause. (ISO 9000, Turnover, Profitability, Order copies as required)	Submitted/ Not submitted.	
15	At least 3 installation sites in India with supporting documents	Submitted/ Not submitted.	
16	Authorized manufacturership / System Integratorship certificate	Submitted/ Not submitted	
17	Original specification sheets for all items	Submitted/Not submitted	
18	Driver software, wherever applicable, to be supplied	Agreed/Not agreed.	
19	Equipment working environment: All the equipment shall work in non-ac-room environment.	Agreed/Not agreed.	
20	A vendor must quote all the items	Agreed/Not agreed.	
21	Technical viability of the project for all the equipments offered by the vendor.	Submitted/ Not submitted.	

\_\_\_\_\_  
Signature with Date

\_\_\_\_\_  
Name in Block Letters

\_\_\_\_\_  
Seal of the Company

- Confirmation in one of the provisions between the vendor's alternatives provided shall be ticked.

**Note:** In case the vendor's confirmation is negative, specific comments are to be filled in the Deviation column. If the space is insufficient, a separate sheet may be enclosed.

**PROFORMA FOR COMPOSITE BANK GUARANTEE FOR  
SECURITY DEPOSIT, PAYMENT AND PERFORMANCE**

This Guarantee Bond is executed this .....day of ..... 20\_ by us the .....(Bank) at ..... P.O. .... P.S..... Dist..... State .....

WHEREAS THE ODISHA POWER TRANSMISSION CORPORATION LTD., a corporate body constituted under the Company Act, 1956 (herein after called “the OPTCL”) has placed orders No.....Dt.....(hereinafter called “The Contract) on M/s..... (hereinafter called “The Contractor”) for supply, install, testing and commissioning of the ..... AND

WHEREAS the Contractor has agreed to supply, install, testing and commissioning of ..... at the OPTCL in terms of the said contract, AND

WHEREAS the OPTCL has agreed (1) to exempt the contractor from making payment of security, (2) to release 100% payment of the cost of materials as per the said agreement and (3) to exempt from performance guarantee on furnishing by the Contractor to the OPTCL a Composite Bank Guarantee of 10% (ten percent) of the contract value in force of the said contract.

NOW THEREFORE in consideration of the OPTCL having agreed (1) to exempt the contractor from making payment of security (2) releasing 100% payment to the contractor and (3) to exempt from furnishing performance guarantee in terms of the said contract as aforesaid, we, the .....(Bank) (hereinafter referred to as ‘the Bank’) do hereby undertake to pay to the OPTCL an amount not exceeding Rs.....(Rupees .....) against any loss or damage caused to or suffered by or would be caused to or suffered by the OPTCL by reason of any breach by the said contractor of any of the terms and conditions contained in the said contract.

(2) We (the Bank.....) do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from the OPTCL stating that the amount claimed is due by way of loss or damage caused to or suffered by the OPTCL by reason of any breach by the said Contractor of any of the terms or conditions contained in the said contract or by reason of the Contractor’s failure to perform the said contract. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs.....(Rupees.....).

(3) We (the Bank.....) also undertake to pay to the OPTCL any money so demanded notwithstanding any dispute or disputes raised by the Contractor in any suit or proceeding instituted / pending before any court or tribunal relating thereto our liability under this present being absolute and unequivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the contractor (s) shall have no claim against us for making such payment.

(Contd.....P/2.)

(4) We (the Bank.....) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said contract and that it shall continue to be so enforceable till all the dues of the OPTCL under or by virtue of the said contract have been fully paid and its claims satisfied or discharged or till Managing Director, Orissa Power Transmission Corporation Limited or his nominee certifies that the terms and conditions of the said contract have been fully and properly carried out by the said Contractor and accordingly discharges this guarantee.

Unless a demand or claim under this guarantee is made on us in writing on or before the \_\_\_\_\_ we shall be discharged from all liability under this guarantee thereafter.

(5) We (the Bank.....) further agree that the OPTCL shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Contractor(s) and we shall not be relieved from our liability by reason of any such variations or extension being granted to the said Contractor or for any forbearance, act or omission on the part of the OPTCL or any indulgence by the OPTCL to the said contractor (s) or by any such matter or thing whatsoever which under the law relating to sureties would but for this provisions have effect of so relieving us.

(6) This guarantee will not be discharged due to the change in the name, style and constitution of the Bank and the contractor.

(7) We (the Bank.....) lastly undertake not to revoke this guarantee during its currency except with the previous consent of the OPTCL in writing.

(8) We (the Bank.....) further agree that this guarantee shall also be invokable at our place of business at Bhubaneswar in the state of Orissa.

Dated at ..... the ..... day of ..... Two thousand .....

For .....  
(indicate the name of the Bank)

Witness:

- 1.
- 2.

**NOTE FOR TENDERERS** : The B.G. is to be furnished in Non-judicial Stamp paper of Rs.50/- as applicable as per Orissa Stamp Duty Act. from any Nationalized Bank.