

TIDEL PARK COIMBATORE LTD

(A JV of TIDCO, ELCOT, TIDEL & STPI)

**INTERNATIONAL TECHNO COMMERCIAL TENDER
PART - I - CONDITIONS OF CONTRACT, TECHNICAL SPECIFICATIONS AND
PRE-QUALIFICATION CRITERIA****BACKBONE, DATA
VOICE COMMUNICATION SYSTEM AND AUDIO, VIDEO CONFERENCE SYSTEM
EQUIPMENTS RELATED WORKS
FOR THE BUILDING COMPLEX OF INFORMATION TECHNOLOGY PARK AT
VILLANKURICHI (SEZ AREA), COIMBATORE****DUE DATE FOR SUBMISSION: ON OR BEFORE 26th March, 2010 at 15.00 Hours****TO BE SUBMITTED TO:**

The Chairman
TIDEL Park Coimbatore Ltd
(First Floor – TIDEL Park)
4, Rajiv Gandhi Salai,
Taramani, Chennai - 600 113 - INDIA
Telephone No.: +91 44 22540500/501
Fax No.: +91 44 22541744

ARCHITECTS & ENGINEERS

M/s. C.R.Narayana Rao
Architects & Engineers
New No.10, Karpagambal Nagar,
Mylapore, Chennai- 600 004 – INDIA
Tel No: 044-24991676 (4 lines)
Fax No: 044-24991318

OWNERS ENGINEERS

M/s. TATA CONSULTING ENGINEERS LTD
73/1, Sheriff Centre,
St. Marks Road,
Bangalore – 560001 - INDIA
Tel No: 080-66226000
Fax No: 080-22274873

BID SUBMITTED BY:

M/s. _____

Address _____

FEBRUARY 2010

TIDEL PARK COIMBATORE LIMITED**CONSTRUCTION OF INFORMATION TECHNOLOGY PARK
BUILDING AT VILLANKURICHI SEZ, COIMBATORE****TENDER FOR****BACKBONE, DATA
VOICE COMMUNICATION SYSTEM AND AUDIO, VIDEO CONFERENCE SYSTEM
EQUIPMENTS RELATED WORKS****Contents**

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TIDEL PARK COIMBATORE LTD.

(A JV of TIDCO, ELCOT, TIDEL & STPI)

**Notice Inviting International competitive Tender
for
BACKBONE, DATA AND VOICE COMMUNICATION SYSTEM AND AUDIO & VIDEO
EQUIPMENTS RELATED WORKS**

**BUILDING COMPLEX OF INFORMATION TECHNOLOGY PARK AT VILLANKURICHI (SEZ AREA),
COIMBATORE**



TIDEL Park Coimbatore Ltd. (TPCL) is constructing a state-of-the-art IT Park with Built up area of 1,61,500 Sq.m. in IT SEZ area at Villankurichi, Coimbatore. TPCL invites techno commercial Bid for **BACKBONE, DATA AND VOICE COMMUNICATION SYSTEM AND AUDIO & VIDEO EQUIPMENTS RELATED WORKS** and related works and operation and maintenance from experienced contractors who meet the following criteria as on 31.03.2009.

- (a) The BIDDER should be a well-established contractor (System integrator) with minimum five years experience and capability in the installation, testing and commissioning of similar nature of works like installation of back bone system, IT infrastructure, Video conference equipments and related works in two separate contracts. Supporting Documents such as Annual reports, Auditor's Certificate, Clients completion certificates for at least one for similar nature of project executed in each year should be furnished as per the prescribed Format – 1.
- (b) Should have an annual turnover of Rs.165 Lakhs during any of the past three financial years.
- (c) Shall produce Banker's solvency Certificate from a Nationalized or Scheduled bank of the value of Rs.40 Lakhs, obtained not earlier than three months from the last date for submission of tender.
- (d) Should have executed the **IT cabling including Cat-6, Fibre cables, Video conference systems, IP telephony systems Data related works** of the value of Rs.135 Lakhs in a single work or two works of the value of Rs.80. Lakhs during the last three years for commercial qualification.

1. Salient features:

Name of work Providing Backbone for Data and Voice communication,(BDVC) IT infrastructure for IBMS works, TIDEL office, Video conferencing system equipment System and related works in the Building Complex of Information Technology Park at Vilankurichi (SEZ Area) Coimbatore (3 basements + G + 4 upper floors).

Approximate value of works **Rs. 165 lakhs**

Period of Completion for BDVC.and related works **90 days**

2. Tender documents can be purchased from the TPCL office, Chennai

- | | |
|--------------------------------------|---|
| (a) Cost (Including VAT) | Rs.15,600/- (Rupees Fifteen Thousand and Six Hundred only) by Demand Draft payable at Chennai in favour of TIDEL Park Coimbatore Ltd. |
| (b) Period of Issue | 24.02.2010 to 25.03.2010 (during office hours) |
| (c) Earnest Money Deposit (EMD) | Rs.1,65,000/- (Rupees one Lakh and Sixty Five Thousand only) by Bank Guarantee on a Nationalized or scheduled Bank valid for 180 days from the last date of submission of tender. |
| (d) Pre-bid Meeting | 5.00 P.M. on 9 th March, 2010. |
| (e) Last date for submission of bids | 3.00 P.M. on 26 th March, 2010 |
| (f) Opening of Technical Bid | 5.30 P.M. on 26 th March, 2010 |
| (g) Validity of Tender | 90 days from the last date of submission of tender |

3. Tender document can be downloaded from the web sites viz. www.tidelpark.com, www.elcot.com & www.tn.gov.in for information purposes only. Tender must be submitted only in prescribed forms purchased from TIDEL Park Coimbatore Ltd.:

TIDEL Park Coimbatore Ltd. reserves the right to accept/reject any one / all the tenders without assigning any reason thereof.

The Chairman

TIDEL Park Coimbatore Ltd
(1st Floor – TIDEL Park)
No.4, Rajiv Gandhi Salai, Taramani
Chennai – 600 113.

Ph: 00 91 44 22540500/501, Fax: 00 91 44 22541744

E-Mail : tidel@md4.vsnl.net.in; tidel@vsnl.com

TIDEL PARK COIMBATORE LIMITED**CONSTRUCTION OF INFORMATION TECHNOLOGY PARK
AT VILLANKURICHI SEZ, COIMBATORE****SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF BACKBONE, DATA
VOICE COMMUNICATION SYSTEM AND AUDIO, VIDEO CONFERENCE SYSTEM
EQUIPMENTS RELATED WORKS****SECTION 1: Instructions to Bidders / Contractors and General Conditions**

- 1) TIDEL Park Coimbatore Limited (TPCL) invites competitive bids in prescribed forms in sealed covers from experienced contractors fulfilling the qualification criteria specified herein, for the work of Supply, installation, testing and commissioning of Back bone, Data communication system and Audio, Video conference conference systems equipments related works for their Information Technology park building at Villankurichi Special Economic Zone, Coimbatore.
- 2) The prescribed forms can be obtained from the office of TPCL, 4, Rajiv Gandhi Salai, Taramani, Chennai 600 113 on non-refundable payment of Rs.15,600/- in the form of Demand draft in the name of TIDEL Park Coimbatore Limited drawn on any Scheduled Bank in Chennai. Bid Forms are not transferable. Completed Bid forms shall be delivered at the same address addressed to TPCL not later than 15-00 Hours on 26th March, 2010, and Technical Bids will be opened on the same day at 17-30 Hours. Bids delivered late for whatever reasons, will not be accepted. Tenders shall be valid for a period of ninety days from the date of opening Price Bids.
- 3) The work of Back bone, Data communication system and Audio, Video conference conference systems equipments related works etc. and maintaining them including rectifying defects and replacing material with new, absolutely free for a maintenance period of one year after the contract period.
- 4) Work shall be executed as per the drawings, Technical specifications and Bills of quantities prepared by M/s C.R.Narayana Rao, Architects and Engineers.
- 5) The contractor shall give a Time schedule for completion of work, including Procurement Plan and Mobilisation Plan of Plant and equipment necessary. Work shall be executed as per the directions of Architects/Owner's Engineer.
- 6) Tenders shall be filled in English, written legibly or typewritten. Overwriting should be avoided, Mistakes should be scored and authorised signatory should attest corrected version. Rates should be entered in words and figures and amounts noted against each item and totaled at the end to arrive at total contract value. Bid drawings shall be signed. If there is a discrepancy between words and figures in rates, the lower of the two shall be considered. Tenderer should also refer para11 below while quoting the rates.
- 7) All pages of the Bid must be initialed by authorised signatory, and authority for signing the Bid must be produced in the case of partnership company, Limited Company. **No joint venture bid will be accepted.**
- 8) TPCL discourages Tenderers to stipulate any additional conditions and are expected to accept the various provisions and conditions in Bid documents. Conditional Bids are liable to be rejected by TPCL. Therefore the Bidder should submit (a) the withdrawal of

Conditions Letter in Format-4 and also (b) Letter of Undertaking in this regard as per Format No.5. The Withdrawal of Conditions Letter and also Letter of Undertaking should be placed in the cover - I of Tender.

9. Bid document shall be submitted in Triplicate in sealed covers.
- a. Cover1: Original, Duplicate and Triplicate copy of Part I (Technical & Qualifying Bid) comprising EMD, Format-4 (Withdrawal conditions Letter) and Format-5 (Letter of Undertaking) Conditions of contract, Technical Specifications & Qualifying Criteria.
 - b. Cover2; Original, Duplicate and Triplicate copy of Part II (Price Bid)
 - c. Both covers 1 &2 should be put in one common cover, also sealed, and addressed to TPCL super scribing the name of work and name of Bidder.

10) Evaluation Method :

First Stage: Cover 1 containing the EMD, Format-4 and Format-5 will be opened. If the EMD (or) Format-4 (or) Format-5 are not submitted or is deficient, TPCL reserves the right to reject the bid and no further evaluation of that bid will be done.

Second Stage : If the EMD, Letter of Withdrawal and Letter of Undertaking submitted are acceptable, evaluation of the technical Bid will be done whether substantive response has come from the Tenderers to the basic prequalification criteria and information called for in Information sheet and whether supporting documents are enclosed or not.

Bidders may be asked to give presentation of their BDVC products, samples and business literatures before opening of Price Bids

Third and Final Stage; The Price Bid of only those bidders who have been pre-qualified will be opened and only the bidder who has complied with all tender conditions and BOQ in full and who is the lowest in price bid will be chosen as the lowest bidder subject nevertheless to the rights of TPCL to call for clarifications and negotiations with the Lowest Bidder before the award of work and to split the work among two or more contractors.

- 11) The contract will be an **item rate contract**, and work done will be measured and paid for at rates agreed as per schedule of quantities and as certified by the Architects. No extra on any account whatsoever will be payable other than measured work as aforesaid. Tenderer's attention is drawn to the **Section 4: For contractor's special attention A. Special economic Zone and B. Taxes** Tenderer's rates shall be deemed to have been quoted taking into consideration the above section part A & B.
- 12) During the course of work Architects/Owner's Engineer/Owner may increase or decrease the quantities to any extent and the contractor will not be entitled to any increase in rates or any compensation whatsoever.
- 13) The contractor shall observe all **local laws, Govt. regulations** as regards his obligations to his employees and Labour, Payment of License fees and consumption charges for water and power or for any other facility payable to the local Utility and/or Govt. authorities. The contractor shall observe safety regulations and take out applicable insurance policies for the work, workmen and third party liability. Attention of bidders is invited to commercial terms elsewhere

- 14 Bidders shall note that the cost of visiting the site, preparation of bid, attending meetings for providing and obtaining clarifications, discussions or presentations will not be reimbursed by TPCL under any circumstances.
- 15) Submission of bid shall mean that the contractors have visited the site and thoroughly understood all the details given or implied in the bid documents supplied by TPCL, accept TPCL's decisions on prequalification and the bid and waive their rights to question the decision of TPCL.
- 16) If the bidders need any clarifications of the bid document they should communicate to TPCL with copy to Architects, at least ten days before the date of submission of tender. Clarifications will be given at a Prebid meeting to be convened if necessary or communicated to all bidders. Request for clarifications later than the date as aforesaid will not be complied with. Such communications, request and clarifications will become part of contract agreement.
- 17) Only Courts in Chennai will have jurisdiction over this contract.
- 18) **TPCL reserves the right to accept or reject any of the applications for pre-qualification without assigning any reason therefor and reserves the right to increase or decrease the scope of work as deemed necessary. The decision on qualifying bidders will be final and binding. TPCL reserves the right to qualify any bidder or to reject any application or to cancel the exercise without having to incur any cost or to assign any reason for its decision to any party whatsoever. Only the price bids of pre-qualified bidders will be opened for consideration.**
- 19) **TPCL reserves the right to split and award the works to any Bidder/Bidders based on competitive offer, and the bidders shall not withdraw their price bid/s on this account which shall amount to breach of tender conditions and their earnest money will be forfeited. The quoted rates shall remain firm and no extra claim or compensation on account of splitting or deleting or increasing or decreasing the scope of the works will be entertained by TPCL.**

SECTION 2 :**Qualifying Criteria and Information sheets****2. a) Qualifying Criteria :**

- 1) The BIDDER should be a well-established contractor (System integrator) with minimum five years experience and capability in the installation, testing and commissioning of similar nature of works like installation of back bone system, IT infrastructure, Video conference equipments and related works in two separate contracts. Supporting Documents such as Annual reports, Auditor's Certificate, Clients completion certificates for at least one for similar nature of project executed in each year should be furnished as per the prescribed Format – 1.
- 2) Should have an annual turnover of Rs.165 Lakhs during any of the past three financial years.
- 3) Shall produce Banker's solvency Certificate from a Nationalized or Scheduled bank of the value of Rs.40 Lakhs, obtained not earlier than three months from the last date for submission of tender.
- 4) Should have executed the **IT cabling including Cat-6, Fibre cables, Video conference systems, IP telephony systems Data related works** of the value of Rs.135 Lakhs in a single work or two works of the value of Rs.80. Lakhs during the last three years for commercial qualification.

The Bidder should provide complete details as per the Format-1,2&3 prescribed along with the supporting documents, in order to evaluate the proposals by Owner and pre-qualifying the Bidder for further evaluations. However the decision of the Owner is the final.

NOTE:

The bidder should enclose OEM authorization letter for Active, Passive, IP-PBX and AV equipments.

PREQUALIFICATION CRITERIA Format No.1

Details to be furnished to establish Pre-Qualification criteria of the following.

- i) The BIDDER should be a well-established and reputed manufacturer /contractor (System integrator) with minimum five years experience and capability in the installation, testing and commissioning of similar nature of works like installation of Back Bone system, IT infrastructure, Video conference equipments works in Single order and two orders. Supporting Documents such as Annual reports, Auditor's Certificate, Clients completion certificates for at least one for similar nature of project executed in each year should be furnished as per the prescribed as per Format – 1.
- ii) Should have an annual turnover of **Rs 165 Lakhs** during any of the past three financial years. as per Format No.1

| S.NO | Particulars | 2008-'09 | 2007- '08 | 2006-'07 | 2005-'06 | 2004-'05 |
|------|---|----------|-----------|----------|----------|----------|
| 1. | Annual Turn over of the company | | | | | |
| 2. | Annual Turnover from similar Back bone IT related work | | | | | |
| 3. | List of Major Back bone, IT related works completed and value during each year a) b) c) | | | | | |
| 4. | Name and value of Operation & Maintenance works carried out with respect to Back Bone Networking system a) b) c) d) e) | | | | | |

| | | | | | | |
|----|---|--|--|--|--|--|
| 5. | Manpower engaged (Average) by the company with respect to Interior work for One year. | | | | | |
|----|---|--|--|--|--|--|

The following Documentary evidences required to establish the above P.Q. Criteria.

- a) Annual report / Income Tax return to establish the Annual Turnover of the company for the last 5 years since 2004-05 (with respect to Sl.No.1).
- b) Memorandum / Articles of the company.
- c) Auditor certificates to establish annual turnover for similar Back bone. IT related works during the Last 5 (five) years.
- d) Client's completion certificates for at least one Back Bone, Data Voice Communication System and Audio & Video Equipments works executed in each year should be furnished for S.No.3&4 of Format-1.

Format No.2

**PREQUALIFICATION CRITERIA
BANKER'S SOLVENCY CERTIFICATE**

To

The Chairman
TIDEL Park Coimbatore Ltd,
4,Rajiv Gandhi Saalai,
Taramani, Chennai 600113

Dear Sir,

SOLVENCY CERTIFICATE

This is to certify that to the best of our knowledge and information , M/s
..... , **(address)**, *a customer of our
Bank is respectable and be treated as good for an engagement upto a sum of Rs.(*
Solvency amount).....only as on(Date of certificate)

**This certificate has been issued without any risk and responsibility on the part of the
Bank or any of its officers.**

This certificate is issued at the specific request of the customer.

Yours faithfully,

forBank

Bank Officer with designation

**Sec.2 b : Information Sheet Structure and Organisation, Registration as contractor,
Previous experience etc**

Bidders should fill up Information sheet. If information is NIL it should be stated as 'NIL' or no such case. If a query is not applicable to the bidders, it should be stated as 'not applicable.'

| | | |
|------------------------|---|--|
| Name of Bidder Company | | |
| 1) | Registered Office Address Telephone Number Web site / E-mail No. Fax Number | |
| 2) | Year of establishment and No. of years experience | |
| 3) | Branches in India | |
| 4) | Give detail including classification, if registered with any Government / Local Bodies / Municipal or other organisation. | |
| 5) | Income Tax Registration no. and Sales tax Registration no; Service Tax Registration No. | |
| 6) | a) Adequate and satisfactory evidence to indicate financial capacity of the organisation to undertake the said work of providing Backbone, IT related works with names of Bankers and their addresses. | |
| | b) Enclose Annual report / Balance sheet and P & L statements for the past three years. | |
| | c) Current Solvency certificate for Rs 40 Lakhs or letter of support from your Bankers. | |
| | d) Banker's overdrafts and credit facilities available. | |
| 7) | Details of previous experience, at least three works one of which should satisfy the qualifying criteria in Sec.2.a.ii Name of Work, location and for whom, and cost of work. Enclose certificates either from Client or the Consultant for the work and photographs of completed works. | |
| 8) | Bidder to enclose Organisation Chart and a list of employees, with their qualifications, Age, years of professional experience and experience in your company (Enclose separately.) | |

| | | |
|-----|---|--|
| 9) | Curriculum Vitae of two key personnel to be in charge of this work at site.(Enclose separately) | |
| 10) | Are you a Recipient of any Award in appreciation of your work? | |
| 11) | Any special information, which you may like to provide. | |
| 12) | Are there any litigation against the company? State Yes / No | |
| 13) | Does any litigation threaten the very existence of company (such as Insolvency / Winding up/ or criminal decree etc.).Give Details. | |

Note :

1. **TPCL** or his authorised representatives reserves the right to verify any part of the information furnished by the bidder in the above statements without any prejudice to the terms and conditions of the Contract. The bidder is deemed to have given his consent for the right of verification by **TPCL** when the bidder submits the above statements.
2. If it comes to the notice of the Client that the bidder has suppressed any information or furnished misleading or inaccurate information, or in case whether any litigation currently in progress at the time of submission of bids lead to the decree by the Court of Law against the bidder, **TPCL** reserves the right to nullify the pre-qualification and to disqualify the bidder. If such information becomes available to **TPCL** prior to issue of Letter of Intent, the bidder will be disqualified and will not be considered for award of work, even though the bidder is L1. If such information comes to the knowledge of **TPCL** after the award of work, **TPCL** reserves the right to terminate the Contract unilaterally at the total cost and risk of the bidder and such action would include but not limited to forfeiture of all deposits, guarantees etc. furnished in any form. **TPCL** will also reserve the right to recover any Retention Money, Mobilisation Advance paid by invoking of Bank Guarantees submitted, including invoking of the Performance Bond.
3. The entire work executed up to the stage of such termination including materials procured and materials ordered but awaiting delivery will be taken over by **TPCL** and adjusted towards any payment due, as per contract conditions. **TPCL** can thereafter arrange for a bidding process for completion of the balance portions, for which any additional financial burden to be met by **TPCL** will also be recovered from the accounts due from the Bidder, who has been terminated.

Signature of the Bidder

Sec.2.c / ANNEXURE**CERTIFICATES**

Enclose Certificates in support of suitability, technical know how and capability for having successfully completed similar nature of works in the last five years.
Also furnish the following details of the enclosed certificates.

| S.No. | Name of Works | Period of Execution of work | Name of Client / Owner. |
|--------------|----------------------|------------------------------------|--------------------------------|
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Signature of the Bidder

SECTION 3 : ADDITIONAL CONDITIONS AND COMMERCIAL TERMS

- 1 **Earnest Money Deposit** The bidders shall enclose E.M.D. of Rs. 1,65,000/- (**Rupees One Lakh and Sixty Five Thousand only**) in the form of Demand draft on a Scheduled bank in Chennai or in the form of Bank guarantee valid for six months. Tenders not accompanied with E.M.D. in the approved form as stated herein will be summarily rejected E.M.D will be refunded/returned in the case of successful bidder on production of Performance Guarantee.
- 2 The **Letter of Award (LOA)** of the bid sent to the successful bidder by **TPCL** shall be construed as a contract binding both the parties. Before the issue of LOA, **TPCL** reserve their rights to call for negotiations, clarifications and presentations by the contractor.
- 3 **Date of Commencement of work:** On issue of Letter of Award the successful bidder (hereinafter referred to as 'Contractor') shall commence the work within 10 days, and complete the work within ten weeks.
- 4 **Performance Guarantee:** The Earnest Money Deposit of the successful Bidder shall be returned without any interest by the Owner, on furnishing a Performance Bond within 7 days of LOA in the form of Bank Guarantee in the format appended herein for an amount of 10% of the contract sum, valid till the end of defect liability period or from the date of satisfactory handing over of the completed works by the **BDVC Contractor** to the **Owner** with provision for direct re-validation on demand by the Owner, when so called for, for the execution and due fulfillment of the Contract. The Performance Bond shall be returned after successful completion of Defect Liability Period or two months after the last notified defect had been rectified, whichever is later.
5. **Mobilization Advance:** After issue of LOA and after submitting a Performance Guarantee for 10% of the accepted value of contract to the Owner, the Contractor has to apply for interest-free mobilization advance for 10% of the value of contract. The advance will be given against submission of Bank Guarantee in the format approved by the Owner, for like amount. The advance will be recovered in two installments from the 1st bill on onwards.
6. **Date of Completion:** The date on which the works have been virtually completed and as certified by Architects.
7. **Defects Liability Period (DLP)** ; (Which shall also be free maintenance period) shall be 24 months from the date of virtual completion certificate or till all the defects have been rectified and so certified by the Architects, whichever is later.
8. **Liquidated damages** : If work is not completed by the stipulated date of completion, Liquidated damages will be levied at the rate of 0.2% of the Contract Value per day, subject to a maximum of 5% of the contract value; Architects's/Owner's Engineer's opinion whether delay has occurred and their decision to enforce liquidated damages will be binding on both the parties.
9. **Contract Agreement:** The Contractor shall execute an agreement with **TPCL** in a format approved by **TPCL** within 10 days of LOA and the following shall be parts of the contract
Part I- Conditions of Contract , Qualifying Criteria and Technical Specifications
Part II Bills of Quantities
Drawings and Correspondence related to the Project including Minutes of Prebid meeting, if any.

10. **Rates shall be firm** throughout the contract period and should include, but not limited to the following: cost of all inputs such; tools and tackles; water and power; and all labour required for finished work and maintenance for one year period after completion of work; all taxes and fees to be paid to local authorities or Government; other than the taxes, duties and Levies to which TIDEL is exempt under SEZ rules. All charges towards getting connection and consumption of water and Power to be paid to Utility authorities; all insurance; and all expenses in fulfilling the duties and obligations in respect of this contract
11. **Item rate contract:** The contract will be an item rate contract and work done will be measured and paid for at rates agreed as per schedule of quantities and as certified by the Architects/OWNER'S ENGINEER. No extra on any account whatsoever will be payable other than measured work as aforesaid.
12. **Assignment or giving on sub-contract**
- The Contractor shall not without the written consent of the Architect/OWNER'S ENGINEER assign the whole or any part of the Contract, and shall not without the written consent of the Architect/OWNER'S ENGINEER (which consent shall not be unreasonably withheld to the prejudice of the Contractor) be given on sub-contract any portion of the work.
13. **During the course of work Architects/Owner's Engineer/Owner may increase or decrease the quantities to any extent** and the contractor will not be entitled to any increase in rates or any compensation whatsoever.
14. **Variations;** If any additional or new items are ordered by Architects for execution, then the rates for the additional items shall as far as possible be arrived at from BOQ or derived from the BOQ. If this is not feasible the Contractor shall quote his rates and submit rate analysis with supporting quotations and Vouchers as may be directed by Architects for a fair evaluation and approval by **TPCL**. On the actual cost of materials delivered at site and labour charges, rates will be arrived. Over this contractor's Overhead and profit at 15 % shall be added to arrive at a final rate. The Fifteen per cent addition shall be deemed to include all incidental and connected charges whether direct or indirect, all applicable taxes, duties and levies, all expenses for Infrastructural facilities, amenities, insurance and supervision, and duties and obligations under the contract.
- Provided that in any case voucher specifying the time daily spent upon the work (and if required by the Architects the workmen's names) and the materials employed shall be delivered for verification to the Architects/Owner's Engineer or his authorised representative not later than the end of the week following that in which the work has been executed.
15. **The contractor shall observe all local laws, Govt. regulations** as regards his obligations to his employees and Labour, Payment of License fees and consumption charges for water and power or for any other facility payable to the local Utility and/or Govt. authorities. The contractor shall observe safety regulations and take out applicable insurance policies for the work, workmen and third party liability. Attention of bidders is invited to **clause 19** below.
- a. **Running Account Bills:** Payment to the contractor will be based on Running Account bills which may be submitted every fortnight/month, and will be certified by Architects within fourteen working days from the date of receipt from the contractor and paid by **TPCL** within thirty working days of receipt of certificate from Architects.

Terms of Interim Payments :

65% pro rata on accepted for item on supply and delivery of materials at site.
25% pro rata on erection / fixing in position of materials with accessories if any.
10% after testing/ commissioning after installation and handing over to clients

17. **Retention Money:** In addition to the Performance Bond in the form of Bank Guarantee as required under Clause No.4 above, as a further security for the due fulfillment of the contract by the **BDVC Contractor**, 10% of the value of the work done will be deducted by the **Owner** from each payment to be made to the **BDVC Contractor** until the retention money amounts to a maximum of 5% of the contract sum of the work. On the Architect's certificate of Virtual completion of the works, 50% of the retention money would be refunded and the balance after due completion of all obligations under the contract agreement and one year defects liability period commencing from the date of taking over by the **Owner** or two months after the last notified defect pointed out had been rectified, whichever is later. The amounts retained by the **Owner** shall not bear interest.
18. **Final Bill** should be submitted by the Contractor within two months of completion of work, which will be certified by Architects within one month of date of receipt from the contractor and will be paid by **TPCL** within one month of receipt of certificate from Architects.
19. **Insurance:** The Contractor shall take out Insurance policies for, a) the work, b) Workmen's Compensation, and c) Third party insurance for Rs.5 lakhs per person, per occurrence and the number of occurrences unlimited, and produce the policies to **TPCL**. Transit insurance as found necessary for the contractor's own materials should be arranged by the contractor himself. All Insurance premiums to be paid for covering risks shall be deemed to be included in quoted rates. The contractor shall indemnify **TPCL** against all claims arising out of this contract.
20. **Rate of Interest for monies retained by TPCL:** NIL
21. **Water and Power: Bidders** should make their own arrangements at their own cost to obtain water and Power connections from local supply authorities and pay all charges for consumption of the same. The contractor at his own cost lay any temporary distributions lines as required for the work and later dismantle and clear away from site. The contractor's rates shall be deemed to include for all the costs as stated herein, and no extra on any account will be payable by **TPCL**.
22. **Decisions:** To prevent disputes and litigations, it shall be accepted as an inseparable part of the contract that in matters regarding materials and workmanship, removal of improper work, interpretation of contract, drawings and specifications, mode of procedure and carrying out the work, defects to be remedied, delay and extension of time, addition, deletion, increase or decrease in quantities, and certificates (except payment certificates) the decisions of Architects shall be final.
23. **Arbitration:** If the Contractor is dissatisfied with the decision of Architects on any matter or question or dispute of any kind (except any of the decisions on excepted matters mentioned in Cl.22 above,) or withholding of any payment certificate to which the contractor may claim to be entitled then, and in any such case either party may seek settlement through Arbitration proceedings in accordance with Laws in force. The governing law of agreement and any arbitration pursuant to it shall be the laws of India. Further disagreement with the Arbitration may be proceeded in a court of Law of India and the dispute shall be deemed to have arisen in Chennai.

24. Coordination of work: The successful bidder shall cooperate with all other agencies engaged on separate contracts in the project, meet their agents and Architects and plan his work

25. Extension of Time :

Upon it becoming reasonably apparent that the progress of the Works is delayed, the Contractor shall within 15 days give written notice of the cause of the delay to the Architects/Owner's Engineer/Owner and if in the opinion of the Architects, the completion of the Work is likely to be or has been delayed beyond the date for completion stated in the appendix to these conditions or beyond any extended time previously fixed under this clause;

By force majeure (earthquake riot and inclement weather (Inclement weather only heavy downpour) or By reason of civil commotion, or by reason of the Contractor's inability for reason beyond his control and which he could not reasonably have foreseen at the date of this Contract to secure such labour, goods or materials as are essential to the proper carrying out of the works,

then the Architects shall so soon as he is able to estimate the length of the delay beyond the date or time aforesaid make in writing a fair and reasonable Extension of Time for completion of the works, provided always that the Contractor shall use constantly his best endeavours to prevent delay and shall do all that may reasonably be required to the satisfaction of the Architects to proceed with the work.

The Contractor is not eligible for any monetary compensation whatsoever due to extension of time granted to him.

26. Determination of Contract

By Client:

Default: If the Contractor shall make default in any one or more of the following respects, that is to say: -

- a) If he without reasonable cause wholly suspends the carrying out of the works before completion thereof, or
- b) If he fails to proceed regularly and diligently with the works, or
- c) if he refuses or persistently neglects to comply with a written notice from the Architects requiring him to remove defective work or improper materials or goods and by such refusal or neglect the work is materially affected, then the Architects may give him the notice by registered post or recorded delivery specifying the default, and if the Contractor either shall continue such a default for 14 days after receipt of such a notice and shall at any time thereafter repeat such a default (whether previously repeated or not), then TPCL without prejudice to any other rights or remedies may within 10 days after such continuance or repetition of default by notice by registered post or recorded delivery forthwith determine the employment of the Contractor under this Contract, provided that such notice shall not be given unreasonably or vexatiously.
- d) If the contractor becomes bankrupt and results in closure of business or winding up or involved in Court litigations threatening the continuation of business then the contract may be terminated by **TPCL** and action taken as stipulated in Note 2. at the end of

Information sheet in Sec.2.b, unless the contract is reinstated by **TPCL**, and **TPCL** agrees with the Trustee in bankruptcy, liquidator, receiver, or manager as the case may be.

By the Contractor:

- a. **If TPCL does not pay the contractor** within the period of honouring the certificates mentioned in Clause preceding this ,and continues default even after 7 days after receiving notice from the Contractor stating the notice of determination under this clause will be served if payment is not received within seven days from receipt thereof , or
- b. **If TPCL** interferes with or obstructs the issue of certificate due under this contract. Or
- c. If the whole or substantially the whole of uncompleted works is suspended for a period of more than one month,

Then the Contractor may thereupon by notice by registered Post or recorded delivery to **TPCL** forthwith determine the contract.

Upon such determination, the respective rights and liabilities of the Contractor and **TPCL** shall be as follows, that is to say:

The Contractor shall with all reasonable diligence, dispatch in such manner and with such precautions as will prevent injury, death or damage of the clauses in respect for which before the date of determination he was liable to indemnify **TPCL** under clause 17 above of these Conditions remove from site all his temporary buildings, plant, machinery, appliances, goods and materials and shall give facilities for his Sub-Contractors to do the same but subject always to the provisions of this clause.

After taking into account amounts previously paid under this Contract the Contractor shall be paid by **TPCL**:

The total value of the works completed at the date of determination.

The total value of work begun and executed but not completed at the date of determination the value being ascertained in accordance with the bill of quantities.

The reasonable cost of the removal under this clause.

Provided that in addition to all other remedies the Contractor upon such determination may take possession of and shall have a lien upon all unfixed materials which may have become the property of **TPCL** by reason of payment in interim bills, until payment of all monies due to the Contractor from **TPCL**.

27. Protection to work and Cleaning

The contractor shall preserve and protect his work and keep the working places and surroundings neat and tidy. On completion he shall remove all debris, clear the gutters/drains free of dirt and dead plants and handover in a tidy condition to the satisfaction of Architects and at no extra cost to **TPCL**.

28. Scaffolding, Staging, Guardrails

The Contractor shall provide, scaffolding, staging, guardrails, temporary stairs which shall be required during construction. The support for the scaffolding, staging, guardrails and temporary stairs shall be strong, adequate for the particular situation. The temporary access to the various parts of the Building under construction shall be rigid and strong

enough to avoid any chance of mishaps. The arrangement proposed shall be subject to the approval of the Architect.

29. House Keeping

The Contractor shall be required to maintain the site and surroundings in a neat and orderly manner, free of accumulating debris, haphazard stacking of materials, unhygienic and unsafe environment, cleaning of the site at all levels inside and outside, removal of unwanted materials, packing cases etc., shall be undertaken once on daily basis. The Contractor shall nominate the Safety Officer to be responsible for housekeeping.

SAFETY MEASURES:

Compliance of Safety Code :

The **Contractor** shall strictly comply with the provision of safety code and safety rules appended hereto. The **Contractor** shall keep the **Employer** fully indemnified against any claims or liabilities arising out of **Contractor's** lapse in safety practices

Safety Code and Safety Rules

There shall be maintained in a readily accessible place first aid appliances including adequate supply of sterilised dressings and cotton wool.

An injured person shall be taken to a public hospital without loss of time, in cases where the injury necessitates hospitalisation.

Suitable and strong scaffolds should be provided for workmen for all works that cannot safely be done from ground.

No portable single ladder shall be over 8 meters in length. The width between the side rails shall not be less than 30 cm. (clear) and the distance between two adjacent rungs shall not be more than 30cm. When a ladder is used an extra mazdoor shall be engaged for holding the ladder.

The excavation material shall not be placed within 1.5 metres of the edge of the trench or half of the depth of trench whichever is more. All trenches and excavations shall be provided with necessary fencing and lighting.

Every opening in the floor of a building or in a working platform be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be one metre.

No floor, roof or other part of the structure shall be so overloaded with debris or materials as to render it unsafe.

Workers employed on mixing and handling material such as asphalt, cement mortar or concrete and lime mortar shall be provided with protective footwear and rubber hand-gloves.

Those engaged in welding works should be provided with welder's protective eye-shields and gloves. All persons at site shall wear shoes and protective safety helmets approved for construction sites.

No paint containing lead or lead products shall be used except in the form of paste or readymade paint.

Suitable facemasks should be supplied for use by the workers when the paint is applied in the form of spray or surface having lead paint dry rubbed and scrapped.

Overalls shall be supplied by the Contractor to the painters and adequate facilities shall be provided to enable the working painters to wash during the period of cessation of work.

Hoisting machines and tackle used in the works, including their attachments, anchorage and supports shall be in perfect condition.

The ropes used in hoisting or lowering material or as a means of suspension shall be of durable quality and adequate strength and free from defects.

B) SAFETY RULES TO BE FOLLOWED BY THE CONTRACTOR DURING EXECUTION OF WORK :

1. All the staff working at site will wear helmets.
2. All electrical equipment used by the Contractor will have double earthing and will be connected through an ELCB.
3. No temporary electrical connections with loose wire will be permitted. For all electrical connections, proper sockets and plugs will be used and wiring / cabling clamped.
4. Electrical hand tools like drilling machine will be of 220 volts type.
5. ELCB's will be used wherever power & electrical connections are taken by the Contract.
6. Fire fighting portable extinguishers will be used and located at appropriate locations.
7. All staff working at heights will use safety belts and standard platforms with one metre height railing.
8. All the staff working will as far as possible wear shoes.
9. All electricians will have wiremen's licence.
10. Standard ladders will be used, non standard ladders will not be permitted.
11. Inflammable materials like Petrol, Kerosene, Wax etc., will not be allowed to be stored at site stores. Special storage space with fire protection arrangements will be provided.
12. Each Contractor will keep a well furnished FIRST AID box with easy accessibility. Respiratory protective equipment should be available with the Contractor.
13. Welding mechanics and electricians will wear rubber gloves.
14. Personal protecting equipment like Ear Muffler, Goggles, Gloves, Safety Belt, Safety Helmet, Rubber Shoes, etc., should be used and available in Contractor's stores.
15. Use of asbestos to be prevented.
16. If correct manual handling is not used, it can result in back injuries. Therefore all workers should be trained in safe manual handling. Special objects require special handling.
17. All scaffolding will be of steel and double stage.

18. Contractors to ensure that all equipment tools, brought on to the premises will be in a safe condition have recently been checked and that all personnel using the equipment and tools have been trained in their safe use.
19. Contractor to ensure that whilst on site premises, he will comply with all health and safety legislation as required by the Employer.
20. All the platforms, scaffolding and catwalks should have railings of 1 Mt. height and 100 mm toe board. All the catwalks should be minimum 450 mm wide and of grill type. All ladders should have hand rails.

* * * * *

SECTION-4

TIDEL PARK COIMBATORE LIMITED**FOR CONTRACTOR'S SPECIAL ATTENTION:****A. SPECIAL ECONOMIC ZONE**

- 1 Government of India, Ministry of Commerce & Industry has approved vide No. F2/5/2006 – EPZ dated 16.06. 2006 M/s. Electronic Corporation of TamilNadu Limited(ELCOT) for establishing a Special Economic Zone(SEZ) and also notified the SEZ vide notification No:564(E) dated 11.4.2007. ELCOT has allotted 9.5acres of land in the above said SEZ-area, for construction of IT Park by TIDEL Park Coimbatore Ltd.
- 2 The building is located in the Special Economic Zone(SEZ) at Villankurichi Village, Coimbatore, Coimbatore North Taluk, Coimbatore District, India. Authorized operations would qualify for exemptions, concessions and drawback as per the procedure in SEZ rule 2006 as amended to date to the Developer (Owner) as well as Contractors engaged by the Developer (Owner).
- 3 Owner of the project:

WHEREAS, the Government of Tamilnadu in G.O. Ms No. 49 Industries(IT) Department dated 21.02.2007, Govt. of Tamilnadu have issued orders that

- The Coimbatore IT Park will be implemented by a new Joint Ventrue Company with Electronics corporation of Tamilnadu Ltd(ELCOT) and Tamilnadu Industrial Development Corporation Ltd(TIDCO) as major shareholders;
- TIDEL Park Ltd's service will be utilized for design contracting and construction of the Coimbatore IT Park.

WHEREAS, a new company viz TIDEL Park Coimbatore Ltd has been incorporated for implementing the project (hereinafter called the "Owner"). All approval/clearance required for the project are to be obtained in the name of the owner.

4 IT-SEZ Approval:

WHEREAS, the Electronics Corporation of Tamilnadu Ltd(ELCOT), has obtained approvals from Ministry of Commerce & Industry, Govt of India for setting up a sector specific Special Economic Zone(SEZ) for IT/ITES sector in over an area of 11.76 Hectares of the below said property, acquired from the Government of Tamilnadu, vide Letter No. F2/S/2006-EPZ dated 16th June, 2006 and subsequently Ministry of commerce & Industry, Govt of India notified the following areas at Villankurichi Village, Coimbatore North Taluq, Coimbatore District, the State of Tamilnadu comprising the survey numbers as given below, vide notification No. SO.564(E) dated 11th April 2007.

| Sl.No. | Survey No. | Area(in Hectares) |
|--------|------------|--------------------|
| 1. | 426/1 | 0.69 |
| 2. | 426/2 | 2.86 |
| 3. | 427/1 | 1.50 |
| 4. | 427/2 | 2.93 |
| 5. | 436 | 3.16 |
| 6. | 461/3 | 0.04 |
| 7. | 462/4 | 0.21 |

| | | |
|-----|--------------|--------------|
| 8. | 463/4 | 0.16 |
| 9. | 465/5 | 0.12 |
| 10. | 466/4 | 0.09 |
| | Total | 11.76 |

5 Land & Co-developer

WHEREAS, the owner and ELCOT have entered a Lease Deed dated, 20.2.2008 for allotment of 9.5 acres of land as Co-Developer plot with exclusive property right for setting up I T Park in Survey.No.427/1(1.81 acres), 427/2(6.40 acres) and 436(1.29acres) situated at Villankurichi Village, Coimbatore North Taluq, Coimbatore District with the following boundaries and also 1.431 acres of land earmarked in the above said IT-SEZ for common facilities as undivided land share.

| | |
|----------|--|
| North by | Land in S.No. 428, Private Factories |
| East by | Land in S.No.436. M/s.TCS |
| South by | Land in S.No.464 and 465 in 100ft. Road |
| West by | Land in S.No.S.No.427/1, Part, M/s. WIPRO Ltd, |

WHEREAS the Owner and ELCOT have entered an agreement on 10.03.2008 to construct an information Technology Park in the above said IT-SEZ Plot, as Co-Developer.

6. Architect:

WHEREAS the Owner is desirous of Construction of Information Technology Park at Special Economic Zone at Villankurichi, Coimbatore (herein after called " the WORK") and M/s. C.R.Narayana Rao, Architects & Engineers, Old No. 5, New no. 10, Karpagambal Nagar, Luz, Mylapore, Chennai – 600 004 as Architect(hereinafter referred to as the ARCHITECT).

7. Owner's Engineers:

The owner has retained M/s. TATA Consulting Engineers Ltd., Bangalore as Owner's Engineers (hereinafter referred to as the Owner's Engineers).

8. The exemptions that would be eligible to the Owner and the Contractor are the following.

- a. Exemptions of customs duty including counter veiling duty, surcharge etc as applicable.
- b. Excise duty, Cess & Surcharge Cess thereon
- c. Central Sales tax
- d. Entry taxes
- e. Service tax for services provided within the processing zone.
- f. Any other Taxes.

9. (a) The tenderer shall quote his rates considering as SEZ Project with the above exemptions taxes, duties and levies available to Owner as well as Contractors engaged by the Owner. Further the tenderer shall quote the rates exclusive of VAT. Such taxes when levied on the bills would be reimbursed to the tenderer upon production of proof of remittance of such taxes to the respective departments.

- (b) (i) The owner has applied to the Government of Tamil Nadu for grant of exemption from VAT on contracts executed in their favour. The Contractor will be intimated upon receipt of the said exemption.
- (ii) Till that time, VAT shall be charged separately in the bills and would be reimbursed upon production of evidence of remittance to the Government.
10. Towards availing tax exemptions, the tenderer shall furnish a list of all materials which are to be imported into the site with quantity, specification and rate/amount along with his tender. The list will be furnished to the SEZ Development Commissioner jointly by the Owner and Contractor for permission to import these materials to TIDEL PARK Coimbatore Ltd., SEZ to avail the duty and tax concessions. The contractor, however will be solely responsible for correctness of details in the List, the delivery Schedule , the works programme and achievement of Milestones.
 11. For purchase of materials indigenously similar procedure as above will be followed to avail excise duty, CST, VAT & other exemptions.
 12. Purchase Order for materials will be placed by the Contractor with manufacturer in the joint name of Owner and the Contractor. All payments to the manufacturer for both imported as well as indigenous shall be made by the Contractor directly to the manufacturer. TIDEL Park Coimbatore Ltd., will not be responsible for any payment to the manufacturer or delay in payment for what so ever reasons.
 13. For items of BOQ involving imported materials as well, the Contractor shall quote the rate only in Indian Rupees .However if the Contractor prefers foreign exchange payment TIDEL Park Coimbatore Ltd., will recommend to the concerned authorities for release of foreign exchange. However TIDEL Park Coimbatore Ltd., will not have any responsibility with regard to the amount of L/C to be opened, foreign exchange rate or amount, for which the Contractor shall be solely responsible. TIDEL Park Coimbatore Ltd., will pay to the Contractor only as per the agreed payment terms and accepted rates.
 14. For imported material, the contractor will release Purchase order directly on the Vendor and also arrange to pay for the goods. The contractor shall clear the customs and avail exemption of customs duty and sales tax concessions and bring the materials directly to the SEZ site .All cost for procurement, freight, clearance, taxes payable to statutory authorities shall be deemed to have been included in the quoted rate.
 15. However, whether the materials are indigenously procured or imported from abroad, the responsibilities of follow-up, pre delivery inspections, physical clearance at manufacturers/ suppliers works / physical clearance from Customs , correctness of the quantity, quality and specifications, loading and transport to SEZ site including Insurance and transit insurance, unloading at site, arranging for inspections by Insurance company representatives and SEZ Commissioner, taking corrective actions if necessary, safe storing at duty free Godown to the satisfaction of SEZ Officer and obtaining re-warehousing certificate and sending to the relevant Customs official stationed at the respective ports, rest solely with the contractor and the quoted rate shall be inclusive of all the requirements.
 16. In cases where purchase orders are necessitated to be placed by the Owner and payments are made, the Owner will deduct the payments made including related costs thereon, from the Contract amount of the contractor. The exchange rate prevailing *on the date of payment* shall be applicable for the imported items.

17. During the course of contract if it becomes essential to change the source from indigenous to imported or vice versa, the contractor shall request for such changes in writing explaining the reasons for the change. In such cases the reduction in price shall be passed on to Owner. However no claim for additional payment will be entertained if there is an increase due to the aforesaid change. No extension of time will be admissible for any such changes.
18. The materials brought to the site shall be stored, utilized & accounted as per SEZ regulations.
19. The contractor has to make his own arrangements for procurement of all other materials required for the work at his own cost as per the accepted rates
20. Once brought to TIDEL PARK Coimbatore Ltd., SEZ, the Duty and Tax free materials cannot be removed outside and any work to be done to make them fit for installation shall be done only within the Zone. In this regard, the contractor may also refer to the Customs Circular No. 29/2006- Cus, dated December 27, 2006
21. The attention of the Contractor is also drawn to Special Notification of the Ministry of Commerce and Industry (Dept. of Commerce) viz "Special Economic Rules,2006 " made by the Central Government empowered to make so under Special Economic Zone Act, 2005 (Act 28 of 2005). The same is published in Part II, Section 3 subsection i. of Gazette of India Extraordinary, dated the 10th February, 2006 of the Government of India. The contractor shall also observe all the norms of SEZ rules and assist the Owner in procurement, transshipment, delivery and safe storage.
22. The Contractor has to quote the rates as SEZ Project on tax exemption basis. However the contractor has to give breakdown of his rates in the format enclosed in the volume Bills of Quantities

Signature of the Bidder

FOR CONTRACTOR'S SPECIAL ATTENTION :**B. TAXES IN SEZ .****1 TAXES, DUTIES, OCTROI ETC.**

CONTRACTOR agrees to and does hereby accept full & exclusive liability for the payment of any and all taxes, duties, entry tax octroi, works contract tax ,Service Tax and cess thereon, etc. now or hereafter imposed, increased, or modified, and all the sales taxes, works contract tax, Service Tax and cess thereon, duties, octroi etc. now in force and hereafter increased imposed or modified from time to time in respect of WORK and materials and all contributions and taxes for unemployment compensation insurance and old age pensions or annuities now or hereafter imposed by any Central or State Government authorities which are imposed with respect to or covered by the wages, salaries, or other compensations paid to the persons employed by CONTRACTOR and CONTRACTOR shall be responsible for compliance with all obligations and restrictions imposed by the Labour Law or any other law affecting Owner-employee relationship and CONTRACTOR further agrees to comply, and to secure the compliance of all Sub-Contractors, with applicable Central, State, Municipal and Local laws and regulations and requirements of any Central, State or Local Government agency or authority. CONTRACTOR further agrees to defend, indemnify and hold harmless from any liability or penalty which may be imposed by the Central, State or Local authorities by reason of any violation by CONTRACTOR or Sub-CONTRACTOR of such laws, regulations or requirements and also from all claims, suits or proceedings that may be brought against the OWNER arising under, growing out of, or by reason of WORK provided for by this CONTRACT, by third parties, or by Central or State Government authority or any administrative Sub-division thereof..

- 1.2 As supplies to TIDEL PARK COIMBATORE LTD., SEZ unit are exempted from all taxes and duties referred to .above the bidder is to ensure that the bid does not include any taxes or duties afore said (A3). The price quoted shall include no element of tax on the supplies. In case the Contractor is of the view that any of the above mentioned exemptions are not applicable to any one of the materials or items, he shall specify such items in the tender and the taxes and duties he has considered for such items to facilitate TIDEL PARK COIMBATORE LTD., to take up with the authorities and obtain possible exemptions. However, the Owner shall not reimburse him, in any case if taxes and duties have been paid by him whether or not he has indicated the same in his rate.

Subject to above, the contractor is also required to confirm when they accept the Purchase Order(PO), that they have not charged the TIDEL PARK COIMBATORE LTD., SEZ Unit for any of the above taxes and duties.

- 1.3 The bidder to understand that if any duties / taxes, agreed to, at the time of placement of order become eligible for refund at a later date, then TIDEL PARK COIMBATORE LTD., SEZ Unit will have the right to amend the PO and reduce the price. The tax/duty amount shall be accordingly reduced from the original PO value through necessary amendment of the PO and the monies if already paid by TIDEL PARK COIMBATORE LTD., SEZ Unit shall be refunded immediately back to TIDEL PARK COIMBATORE LTD., SEZ Unit.
- 1.4 Supplies to SEZ are treated at par with exports and such supplies shall be eligible for refund of non-usable accumulated CENVAT credit on the inputs contained in such supplies. Accordingly, the excise duty/ CVD component cannot form part of the price quoted or be included in the PO Value. Contractor confirms when the PO is accepted that such components are not included in their price.

- 1.5 The Contractor shall provide a Bill of Export and Packing List in quintuplicate giving therein the description of goods to be submitted to the SEZ customs at least one week prior to the dispatch of the goods.

The contractor shall indicate in the Bill of Export whether the supplies are being made under Duty Drawback or DEPB or DFRC or Advance License. If the supplies are made under DEPB scheme, the TIDEL PARK COIMBATORE LTD., SEZ Unit shall issue a disclaimer certificate to enable the Contractor to avail the export benefit from the licensing authority. Moreover, at the time of supply, the documents accompanying the goods should include the Bill of Export and ARE-1.

On admission of goods supplied, into the SEZ, it shall be the Contractor's responsibility to get a copy of the ARE-1/ Invoice with the endorsement by the authorized officer of the customs in the SEZ for submission to the Contractor's jurisdictional Central Excise Authority.

- 1.6 The contract value shall not be adjusted on account of any increase in Statutory Levies imposed by competent authorities by way of fresh notification(s) within the stipulated delivery period. However, in case of reduction in Statutory Levies within the stipulated delivery period, the benefits of the same shall be passed on to the TIDEL Park Coimbatore Ltd., SEZ Unit.

No Taxes, Duties and Levies as applicable to SEZ will be payable by TIDEL Park Coimbatore Ltd., SEZ Unit except in case of new levies, taxes and duties imposed by the Competent Authorities by way of fresh notification(s) subsequent to the issue of Work Order but within the stipulated delivery period.

Notwithstanding what is stated above, new Taxes, Duties and Levies shall apply only to that portion of work Order not executed on the date of notification by Competent Authority. Further, new Taxes, Duties and Levies after due date of delivery shall not affect Work Order terms and value.

The Work order value shall not be subject to any variation on account of Sales Tax/ VAT for any reason whatsoever.

Specifically, no taxes/ duties and levies would be entertained for payment which was not factored at the time of bid.

- 1.7 The statutory deduction for taxes and levies will be made from your bills at applicable rates prevailing from time to time, for the following.

1. Income tax and surcharge
2. Work contract tax.
3. Construction workers welfare tax

Your quoted price shall be firm till the completion of this project.

- 1.8 Where TIDEL PARK COIMBATORE LTD., enters in to a contract with the identified sub contractor / direct sub contractor / other agencies, the procedures, terms and conditions as regards tax and SEZ related aspects as applicable to the contractor would apply to the said Subcontractor / direct sub contractor. Specifically, the owner will not be obligated to sub contractor/ direct sub contractor/ other agencies for any of the tax amount or for any documentation requirement. The entire responsibility, if any in this regard would vest with the contractor.

**Signature of the Bidder
with date and seal**

SECTION - 5

BID FORM

To
The Chairman ,
TIDEL PARK COIMBATORE LIMITED,
 First Floor, TIDEL Park
 N0.4,Rajiv Gandhi Salai,
 Chennai – 600 113..

Dear Sir,

1. Having examined the drawings, specifications, designs and schedule of quantities relating to the works specified in the memorandum hereinafter set out and having visited and examined the site of the works specified in the said memorandum and having acquired the requisite information relating thereto as affecting the Bid, I/we hereby offer to execute the works specified in the said memorandum within the time specified in the said memorandum at the rates mentioned in the attached schedule of quantities and in accordance in all respects with the specifications, designs, drawings and instructions in writing referred to in conditions of Bid, the Articles of Agreement, Special Conditions, Schedule of Quantities and Conditions of Contract and with such materials as are provided for, by, and in all other respects in accordance with such conditions so far as they may be applicable.

MEMORANDUM

- | | | |
|---|---|--|
| a) Description of works | : | Providing Backbone for Data and Voice communication,(BDVC) IT infrastructure for IBMS works, TIDEL office, Video conferencing system equipment System and related works in Information Technology Park Building complex at Special economic Zone at Villankurichi, COIMBATORE. |
| b) Value of Contract | : | Rs 165 lakhs (Rupees One Crore and sixty five lakhs) |
| c) Earnest money | | Rs.1,65,000/- (Rupees One lakhs sixty five thousand only) by Bank Guarantee (valid for 180 days from the last date of submission of Bid) in favour of M/s. TIDEL Park Coimbatore Ltd., |
| d) Percentage to be deducted from bills towards retention money | : | 10% (Ten Percent) of the value of work billed, subject to a maximum of 5% of contract value. |
| (e) Date of Commencement of activities | : | The date of letter of Award (LOA) is treated as commencement of contract and work has to be commenced within 10 days from the date of issue of Letter of Award. |
| (f) Time allowed from date of Commencement for completion of the work including installation of all services, testing, commissioning and handing over | : | 90 days from issue of LOA |

- (g) Operation & Maintenance : Comprehensive maintenance for 7 years including Defective Liability Period of Two years. During DLP Operation will be paid by Owner and replacement of all defective materials are at Contractors cost.
2. Should this Bid be accepted, I/we hereby agree to abide by and fulfill the terms and provisions of the said Conditions of Contract annexed hereto or in default thereof to forfeit and pay to TIDEL Park Coimbatore Limited, Coimbatore the amount mentioned in the said contract.
 3. We agree to execute the works as independent BDVC Contractor under our own responsibility as and when inducted by the Owner.
 4. I/We have deposited a sum of Rs.1,65,000/- (Rupees One Lakhs Sixty Five Thousand only) as earnest money in the form of Bank Guarantee from Scheduled Bank ,with TIDEL Park Coimbatore Ltd., Coimbatore which amount is not to bear any interest. Should I/we fail to execute the contract when called upon to do so, I/we do hereby agree that this sum shall be forfeited by me/us to the TIDEL Park Coimbatore Ltd.,
 5. If this Bid is accepted we agree to provide a Bank Guarantee from a Scheduled Bank as Performance Bond for a sum equivalent to **Ten** percent of the contract value for the due performance of the contract under the terms of the conditions of contract within time.
 6. We agree to abide by this Bid for the period of ninety days from the date of opening of price bid and it shall remain binding upon us and may be accepted at any time before the expiration of that period without any additional cost.
 7. Unless and until a formal agreement is prepared and executed this Bid together with your written acceptance thereof, shall constitute a binding contract between us.
 8. The lists showing the particulars of large works carried out and the names of manufacturers of specialized items as required are enclosed.
 9. Our bankers are : (Please state name, address, and phone no.)
 - i)
 - ii)

The names of Partners of our firm / Directors of our company are :
(please state name, address, and Phone no.)

 - i)
 - ii)

The names of the Partner of the firm/Director of our company authorised to sign :

or

Name of person having Power of Attorney to sign the Contract (certified true copy of Power of Attorney should be attached) (PI. state name, address and Telephone No.

Yours faithfully,

Signature of the Bidder.

(Should be signed by the authorised signatory. Board Resolution in the case of company or a letter signed by all partners in the case of Firm, to be enclosed.

WITNESSES :

i) Signature:

Occupation:

Address:

ii) Signature:

Occupation:

Address

SECTION-6**ARTICLES OF AGREEMENT
(DRAFT FORMAT)**

ARTICLES OF AGREEMENT made on this day of 2010 between TIDEL Park Coimbatore Limited a company incorporated under Companies Act 1956 having its registered office at TIDEL Park Ltd., No.4,Rajiv Gandhi Salai, Taramani, Chennai – 600 113, represented by **Mr/Mrs..... IAS, Chairman/Director/General Manager** hereinafter called "the Owner" which expression shall unless the context required otherwise include its successors and assigns) of the FIRST PART.

and.....of the other part whose registered office is situated at.

(hereinafter called " the Contractor" or " BDVC Contractor")

o **Owner of the project:**

WHEREAS, the Government of Tamilnadu in G.O. Ms No. 49 Industries(IT) Department dated 21.02.2007, Govt. of TamilNadu have issued orders that

- The Coimbatore IT Park will be implemented by a new Joint Venture Company with Electronics corporation of Tamilnadu Ltd(ELCOT) and TamilNadu Industrial Development Corporation Ltd(TIDCO) as major shareholders;
- TIDEL Park Ltd's service will be utilized for design contracting and construction of the Coimbatore IT Park.

WHEREAS, a new company viz TIDEL Park Coimbatore Ltd has been incorporated for implementing the project(hereinafter called the "Owner"). All approval/clearance required for the project are to be obtained in the name of the owner.

➤ **IT-SEZ Approval:**

WHEREAS, the Electronics Corporation of Tamilnadu Ltd(ELCOT), has obtained approvals from Ministry of Commerce & Industry, Govt of India for setting up a sector specific Special Economic Zone(SEZ) for IT/ITES sector in over an area of 11.76 Hectares of the below said property, acquired from the Government of Tamil Nadu, vide Letter No. F2/S/2006-EPZ dated 16th June, 2006 and subsequently Ministry of commerce & Industry, Govt of India notified the following areas at Vilankurichi Village, Coimbatore North Taluk, Coimbatore District, the State of Tamilnadu comprising the survey numbers as given below, vide notification No. SO.564(E) dated 11th April 2007.

| Sl.No. | Survey No. | Area(in Hectares) |
|--------|--------------|--------------------|
| 1. | 426/1 | 0.69 |
| 2. | 426/2 | 2.86 |
| 3. | 427/1 | 1.50 |
| 4. | 427/2 | 2.93 |
| 5. | 436 | 3.16 |
| 6. | 461/3 | 0.04 |
| 7. | 462/4 | 0.21 |
| 8. | 463/4 | 0.16 |
| 9. | 465/5 | 0.12 |
| 10. | 466/4 | 0.09 |
| | Total | 11.76 |

➤ **Land & Co-developer**

WHEREAS, the owner and ELCOT have entered a Lease Deed dated, 20.2.2008 for allotment of 9.5 acres of land as Co-Developer plot with exclusive property right for setting up I T Park in Survey.No.427/1(1.81 acres), 427/2(6.40 acres) and 436(1.29acres) situated at Vilankurichi Village, Coimbatore North Taluk, Coimbatore District with the following boundaries and also 1.431 acres of land earmarked in the above said IT-SEZ for common facilities as undivided land share.

| | |
|----------|--|
| North by | Land in S.No. 428, Private Factories |
| East by | Land in S.No.436. M/s.TCS |
| South by | Land in S.No.464 and 465 in 100ft. Road |
| West by | Land in S.No.S.No.427/1, Part, M/s. WIPRO Ltd, |

WHEREAS the Owner and ELCOT have entered an agreement on 10.03.2008 to construct an information Technology Park in the above said IT-SEZ Plot, as Co-Developer.

WHEREAS the **Owner** is desirous of Providing Backbone for Data and Voice communication System in the Information Technology Park Building at Special Economic Zone at Villankurichi, Coimbatore (hereinafter called "the Work") and has caused drawings and Schedule of Quantities showing and describing the work to be done as prepared by or under the direction of Architect, **M/s. C.R. Narayana Rao, Architects & Engineers**, Old No. 5, New No. 10, Karpagambal Nagar, Luz, Mylapore, Chennai - 600 004, [hereinafter referred to as the Architect].

AND WHEREAS the said drawings numbered as per list attached to the Bid document covering conditions, the specifications and the Schedule of Quantities have been signed by or on behalf of the parties hereto.

AND WHEREAS the "**BDVC Contractor**" has furnished Bank Guarantee for a sum of Rs..... (Rupees only) as Performance Bond, valid from the date of commencement of work till the end of defect liability period of 24 calendar months from the date of taking over the work by the **Owner** with provision for direct re-validation of the Bond on demand if so required by the **Owner** for due performance of this agreement.

AND WHEREAS the "**BDVC Contractor**" has supplied the **Owner** with a fully priced copy of the said Schedule of Quantities – Part-II (which copy is hereinafter referred to as "the Contract Bills") AND WHEREAS the said Drawings (hereinafter referred to as "the Contract Drawings") and the Contract Bills have been signed by or on behalf of the parties hereto.

NOW IT IS HEREBY AGREED AS FOLLOWS:

1. For the consideration hereinafter mentioned the **BDVC Contractor** will upon and subject to the Conditions annexed carry out and complete the Work shown upon the Contract Drawings and described by or referred to in the Contract Bills and in the said Conditions.
2. The **Owner** will pay the **BDVC Contractor** the said contract amount Rs..... (Rupees. only) (hereinafter referred to as "the Contract Sum") or such other sum as shall become payable hereunder at the times and in the manner specified in the said Conditions.
3. The term "the Architect " in the said Conditions shall mean the said **M/s. C R Narayana Rao, and the term owners Engineers in the said condition shall mean said the M/s.TATA Consulting Engineers Ltd as nominated by the owner.** or in the event of

their ceasing to be the Architect/**Owner's Engineers** for the purpose of this Contract, such other person as the **Owner** shall nominate for that purpose, not being a person objected to by Contractor for reasons considered by the **Owner**, as valid. Provided always that no person subsequently appointed to be the Architect under this clause shall be entitled to disregard or overrule any certificate or opinion or decision or approval or instruction given or expressed by the Architect (s) / **Owner's Engineers** at any time.

4. The said Condition and appendix thereto shall be read and construed as forming part of this Agreement, and the parties hereto shall respectively abide by, submit themselves to the Conditions and perform the agreements on their parts respectively in such Conditions contained.
5. The plans, agreement and documents mentioned herein shall form part of this Contract.
6. The Contract is not a lump sum contract but an item rate contract to carry out the work in respect of Providing Backbone for Data and Voice Communication System in the construction of Information Park Building at Villankurichi SEZ, Coimbatore,. The **BDVC Contractor** shall be paid for the actual quantity of work done, as measured at site, at the accepted rate contained in the Schedule of Rates and Probable quantities or as provided in the said Conditions.
7. The **BDVC Contractor** shall afford every reasonable facility for the carrying out of all works relating to civil works and all other ancillary works in the manner laid down in the said Conditions, and shall make good any damage done to walls, floors, and other properties of the **Owner** during execution and after the completion of such works.
8. The **Owner** reserves to itself the right of altering the Drawings and nature of the work by adding to or omitting any items of work or having portions of the same carried out without prejudice to this Contract. However the scope and extent of changes that can be ordered by the **Owner** will be limited to $\pm 25\%$ of the contract sum and the **BDVC Contractor** shall not be entitled to any compensation or claim due to such change (s) / Order (s) by the **Owner**. The **BDVC Contractor** will only be paid for the actual quantity of works done payable at the accepted unit rates.
9. All differences and disputes arising between TPCL, and the BDVC contractor on any matter connected with the assignment, -other than the Excepted matters referred in the Conditions for which TPCL's decision will be final and binding on the contractor,- shall be referred to Arbitration. The Arbitration proceedings shall be conducted in English and in accordance with the provisions of Indian Arbitration and Conciliation Act 1996 or any statutory modification or enactment thereof. The venue of Arbitration shall be Chennai.

The parties hereby agree that one arbitrator each shall be appointed by each party. The arbitrators together will appoint a third arbitrator who shall act as the Lead Arbitrator.
10. Time shall be considered as the essence of this Contract and the **BDVC Contractor** hereby agrees to commence the work within a period of Ten days from the date of issue of Letter of Award as provided for in the said Conditions and to complete the entire work within a period of 90 days thereof subject nevertheless to the provisions for extension of time.
11. All payments by the **Owner** under this contract will be made only through Banking Channel at Chennai / Coimbatore in Indian Rupees.
12. All disputes arising out of or in any way connected with this agreement shall be deemed to have arisen at Chennai and only Courts in Chennai shall have jurisdiction over them.

13. That the several parts of this Contract have been read by the **BDVC Contractor** and fully understood by the **BDVC Contractor**.

Signature Clause

| TPCL, | BDVC Contractor |
|----------------------------------|------------------------|
| Signed and Delivered By | |
| Name & Designation | |
| Address | |

WITNESSES :

| | |
|--------------------|-------|
| 1) Signature | |
| Occupation | |
| Address | |
| 2) Signature | |
| Occupation | |
| Address | |

The COMMON SEAL OF was hereunto affixed pursuant to the resolutions passed by its Board of Directors at the meeting held on

In the presence of :

(1) Name and Designation:

(2) Name and Designation:

If the **BDVC Contractor** signs under its common seal, the signature clause should correspond with the sealing clause in the Articles of Association.

Directors who have signed these presents in token thereof in the presence of :

(1) Name and Designation:

(2) Name and Designation:

If the **BDVC Contractor** signing by the hand of power of attorney,

SIGNED AND DELIVERED BY the Contract by the hand of Shri and duly constituted attorney.

Proforma of Bank Guarantee for Earnest Money

Whereas (hereinafter called "the Tenderer")
has submitted its tender dated for the construction of
.....
.....
hereinafter called "the tender".

KNOW ALL MEN by these presents that we Having our
registered office at (hereinafter called "the Bank") are bound unto TIDEL Park
Coimbatore Ltd., (hereinafter called the "OWNER") in the sum of Rs..... (Rupees
..... only) for which payment well and truly to be made to
the said OWNER, the Bank binds itself, its successors and assigns by these presents.

Sealed with common seal of the said Bank this day of 2010

The Conditions of the obligation are :

- a) if the Tenderer withdraws his tender during the period of tender validity.
- b) if the Tenderer fails to accept the corrections of his errors in the tender documents as determined by the OWNER.
- c) If the Tenderer having been notified of the acceptance of his tender by the OWNER during the period of validity of tender :
 - i) fails or refuses to execute the Form of Agreement.
 - ii) fails or refuses or neglects to furnish the Performance Bank Guarantee.

We undertake to pay to the OWNER the above amount upon receipt of his first written demand, without the OWNER having to substantiate his demand provided that in his demand the OWNER will note that the amount claimed by him is due to him owing to the occurrence of any of the above conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including the date ninety (90) days after the date of expiry of the period of tender validity, and any demand in respect thereof should reach the Bank not later than the date of expiry of this guarantee.

Signature of the Bank

Signature of Witness

Name of Witness

Address

FORM OF PERFORMANCE GUARANTEE

1. In consideration of the TIDEL PARK Coimbatore Ltd. (hereinafter called "TPCL,") having agreed to allow M/s. (hereinafter called "the said **BDVC Contractor(s)**") from the demand under the terms and conditions of an Agreement No. for the work of Providing Providing Backbone for Data and Voice communication,(BDVC) IT infrastructure for IBMS works, TIDEL office, Video conferencing system equipment System and related works in the construction of Information Technology Park at Villankurichi Special Economic zone, Coimbatore, (hereinafter called "the said Agreement" for furnishing Performance Bond for the due fulfillment by the said **BDVC Contractor** of the terms and conditions in the said Agreement, by production of a BANK GUARANTEE for RS.. . . . (Rupees.. . . . only). We the (Name of the Bank) having our Head Office at and having branch at referred to as "the Bank" at the request of M/s. **BDVC Contractor(S)** do hereby undertake to pay to TPCL, an amount not exceeding RS.. . . . on demand by TPCL,.

2. We (Name of the Bank) branch do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from TPCL, stating that the amount claimed is required to meet the recoveries due or likely to be due from the said **BDVC Contractor(s)**. 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.. . . . only).

3. We undertake to pay to the TPCL,, the amount due under this Guarantee so demanded notwithstanding any dispute to disputes raised by the **BDVC Contractor(s)** in any suit or proceeding 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 thereunder.

4. We (Name of the Bank) branch 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 agreement and that it shall continue to be enforceable till the dues of TPCL, under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till the Engineer in charge on behalf of TPCL, certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said **BDVC Contractor(s)** accordingly discharges this guarantee.

• We (Name of the Bank) branch further agree with TPCL,, that TPCL, 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 **BDVC Contractor(s)** from time to time or to postpone for any time or from time to time any of the powers exercisable by TPCL, against the said **BDVC Contractor(s)** and to forbear or enforce any of terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said **BDVC Contractor(s)** or for any forbearance act or omission on the part of the TPCL, or any indulgence by the TPCL, to the said **BDVC Contractor(s)** or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.

(In a Stamp Paper of/-)

AFFIDAVIT

We have submitted Bank Guarantee for the work
Agreement No. from (Name of the Bank) branch to the TPCL,
Limited, Chennai with a view to furnish Performance Bond. This Bank Guarantee expires on ..
. We undertake to keep the validity of the Bank Guarantee in force by getting it
extended from time to time at our own initiative upto a further period of six months or as
directed by TPCL,.

We also indemnify TPCL, against any losses arising out of non-encashment of the Bank
Guarantee if any.

Notary Public Signature

Signature of the **BDVC Contractor**

PROFORMA OF BANK GUARANTEE FOR ADVANCE PAYMENT

In consideration of the **TIDEL Park Coimbatore LTD.**, (hereinafter called the "**OWNER**") having agreed to pay mobilisation advance under the terms and conditions of letter of acceptance No..... dated made between M/s. a company having its registered office at in the state of (hereinafter called "the said **BDVC CONTRACTOR**" which expression shall unless the context required otherwise include its successors and assigns) for the **WORK** of construction of, **Chennai**, by "the said **BDVC CONTRACTOR**" on production of a Bank Guarantee for Rs. (Rupees

We, (hereinafter referred to "as the Bank" at the request of M/s..... do hereby undertake to pay to the **OWNER** an amount not exceeding Rs..... (Rupees..... only).

We, do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from the **OWNER** stating that the amount claimed is required to meet the recoveries due or likely to be due from the said **BDVC CONTRACTOR**. 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 only).

We undertake to pay to the **OWNER**, any money so demanded notwithstanding any dispute or disputes raised by the **BDVC CONTRACTOR** in any suit or proceeding 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 guarantee shall be a valid discharge of our liability or payment thereunder and the **BDVC CONTRACTOR** shall have no claim against us for making such payment.

This Guarantee shall remain in force and effect so long as the said advance or any part thereof remaining outstanding and shall expire and become ineffectual only after the recovery of the entire sum of Rs. _____ covered by the Guarantee.

The Guarantee shall come into force from the date **BDVC CONTRACTOR** receives from the **OWNER** the said advance.

This Guarantee will not be discharged due to change in the constitution of the bank or the **BDVC CONTRACTOR**.

We, lastly undertake not to revoke this guarantee except with the previous consent of the **OWNER** in writing.

This Guarantee shall be valid upto unless extended on demand by The **OWNER**. Notwithstanding anything mentioned above our liability against this guarantee is restricted to Rs..... (Rupees only).

Witness : For and on behalf of the Bank

Name : Designation

Address : Date

SECTION-7**TECHNICAL SPECIFICATION****Detailed Scope of works**

This specification comprises the concept and codes to be followed for the BACK BONE CABLING, IT WORKS AND VIDEO CONFERENCE SYSTEM at proposed Building Complex of Information Technology Park at Villankurichi (SEZ Area), Coimbatore.

The systems cover Supply, installation, testing and commissioning of following subsystems.

1. Backbone cabling between Grounds floor Backbone room to each floor at shaft level.
 - a. 12 C Single mode and 12C OM 3 multimode fibre cable from Backbone room respective floor shaft.
 - b. 6C Multimode Fibre cable – 2 Core working + 4 Core Spare for commercial space, Camera POE Switches
 - c. 20 Pair Copper Telephone cable office and 6 pair telephone cable for commercial spaces.
 - d. Necessary LIU's and Telephone Krone boxes
 - e. Conduit provision for Service providers
2. IP Network for IBMS IP CCTV cameras, Access control system, Fire alarm panels etc including providing of POE switches, Cat 6 cables, face plates with I/O modules.
3. Network cabling for TIDEL office workstations, conference rooms, meeting rooms, Substations, security kiosk etc.
4. IP Telephonic system for TIDEL office, Substation, Security gates, Tenant offices, commercial space etc.
5. Audio Video equipments for Conference hall.
6. Common infrastructure for cabling line cable trays, conduits etc.
7. Supply of Servers, FMS software for Facility management.

TECHNICAL SPECIFICATIONS FIBER CABLING AND COPPER TELEPHONE CABLING WORKS

Industry requirements

The following installation, documentation, component and system industry specifications shall be met or exceeded:

- e) ANSI/TIA/EIA-568-B.1 and addenda
"Commercial Building Telecommunications Cabling Standard - Part 1: General Requirements"
- f) ANSI/TIA/EIA-568-B.2 and addenda
"Commercial Building Telecommunications Cabling Standard - Part 2: Balanced Twisted-Pair"
- g) ANSI/TIA/EIA-568-B.3 and addenda
"Commercial Building Telecommunications Cabling Standard - Part 3: Optical Fiber Cabling and Components Standard"
- h) ANSI/TIA/EIA-569-A and addenda
" Commercial Building Standard f /TIA/E or Telecommunications Pathways and Spaces"
- i) ANSI/A-606-A and addenda
" Administration Standard for the Telecommunications Infrastructure of Commercial Buildings"
- j) ANSI-J-STD-607-A and addenda
" Commercial Building Grounding and Bonding Requirements for Telecommunications"
- k) ANSI/TIA/EIA-526-7
"Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant"
- l) ANSI/TIA/EIA-526-14A
"Optical Power Loss Measurements of Installed Multimode Fiber Cable Plant"
- m) IEC/TR3 61000-5-2 - Ed. 1.0 and amendments
"Electromagnetic compatibility (EMC) - Part 5: Installation and mitigation guidelines - Section 2: Earthing and cabling"
- n) ISO/IEC 11801:2000 Ed2.0 and amendments
" Information technology - Generic cabling for customer premises"
- o) CENELEC EN 50173:2000 and amendments
" Information Technology - Generic cabling systems"

Balanced twisted-pair Product specifications

In addition to meeting the 250MHz category 6 specifications outlined in ANSI/TIA/EIA-568-B.2, the requirements in this section must also be met for all applicable balanced twisted-pair products as listed below.

Outlets

All category 6 information outlets designed for termination of 4-pair balanced twisted-pair category 6 copper cables must possess the following characteristics at the minimum:

CAT 6 INFORMATION OUTLET (WORK AREA COMPONENT) SPECIFICATIONS:

1. The CAT 6 information outlets should comply fully or exceed with category 6 connecting hardware specifications for all pair combinations up to 250 MHz.
2. The lead frame design used for information outlet should have advanced pair balancing design with linear crosstalk response. It should ensure full compliance with category 6 specifications. – Using Lead Frame Technology
3. The information outlets should use strain relief mechanism to simplify and reduce installation time protecting the quality of the termination simultaneously.
4. The termination cap shall provide strain relief on the cable jacket, ensure cable twists are maintained to within 1/2" (12.7. mm) and include a wiring scheme label.
5. The information outlet should be backward compatible and should complying with the standard IEC 60603-7 for backward compatibility.
6. All outlets should be compatible with both T568A and T568B wiring options.
7. The jack shall be able to be re-terminated a minimum of 10 times and be available in multiple colors or more for color-coding purposes.
8. They shall be universal in design, accepting 2, 3, or 4 pair modular plugs without damage to the outer jack contacts.
9. The jacks shall terminate 4 pair 24 / 22 AWG 100 ohm solid unshielded twisted pair cable.
10. The jacks should be of TOOL FREE TERMINATION type for quick and easy termination and for uniformity in terminations.

NEAR END CROSS TALK PERFORMANCE

MARGIN AT 250 MHZ

| | | |
|------------|---|---------|
| Worst Case | : | 0.84 db |
| Typical | : | 4.37 db |

RETURN LOSS

MARGIN AT 250 MHZ

| | | |
|------------|---|---------|
| Worst Case | : | +6.9 db |
| Typical | : | +8.3 db |

FEXT LOSS

MARGIN AT 250 MHZ

| | | |
|------------|---|---------|
| Worst Case | : | +2.1 db |
| Typical | : | +5.1 db |

ATTENUATION

MARGIN AT 250 MHZ

| | | |
|------------|---|----------|
| Worst Case | : | +0.12 db |
| Typical | : | +0.14 db |

Patch cords**CAT 6 MODULAR CORDS SPECIFICATIONS:**

1. The modular cord should be compatible with both T568A and T568B wiring schemes
2. The modular cord should have strain relief boots with a latch guard or a one-piece, tangle-free latch design to protect plug latch from snagging when pulling cords through pathways or cable managers
3. All the modular cords should be factory assembled cords made out of stranded cable and should be 100% tested to 250 MHz.
4. The modular cords should be made using excellent plug-to-cable strain relief without causing pair deformation.
5. The modular cord should provide strain and bend relief mechanism to improve the plug-to-cable retention and maximum performance by preventing pair deformation, as caused by mechanical strain.
6. The modular cord boots should be colored for additional color-coding.
7. The modular plugs should provide long-term resistance to corrosion from humidity, extreme temperatures, and airborne contaminants.
8. The modular cord plug geometry should meet FCC 68.500 and IEC 60603-7 specifications for modular plugs.

9. The cordage and boots should be available in a wide range of colors for easy identification.
10. The Category 6 Stranded cable used to manufacture the modular patch cords should meets the specifications set forth by both ANSI/TIA/EIA-568-B.2-1 and ISO/IEC 11801:2002.
11. The modular patch cords should have compliance to both '568 and '11801 to ensure minimal cable impedance variation and superior return loss performance.

| FREQUENCY (MHz) | MAXIMUM ATTENUATION (db/100m) | POWERSUM ELFEXT LOSS (db) | POWERSUMFEXT LOSS (db) |
|-----------------|-------------------------------|---------------------------|------------------------|
| 1 MHz | 2.4 | 67.8 | 72.3 |
| 4 MHz | 4.5 | 55.8 | 63.3 |
| 10 MHz | 7.1 | 47.8 | 57.3 |
| 16 MHz | 9.1 | 43.7 | 54.2 |
| 20 MHz | 10.2 | 41.8 | 52.8 |
| 31.25 MHz | 12.8 | 37.9 | 49.9 |
| 62.5 MHz | 18.5 | 31.9 | 45.4 |
| 100 MHz | 23.8 | 27.8 | 42.3 |
| 200 MHz | 34.8 | 21.8 | 37.8 |
| 250 MHz | 39.4 | 19.8 | 36.3 |

Patch panels

All termination panels shall facilitate cross-connection and inter-connection using modular patch cords and shall conform to EIA standard, 19-inch relay rack mounting requirements.

CAT 6 JACK PANEL SPECIFICATIONS:

1. The jack panel specifications should meet or exceed EIA/TIA category 6 connecting hardware specifications for all pair combinations up to 250 MHz.
2. The Jack Panel should be predominantly **black** in color and should be mountable directly to an EIA standard 19-inch relay rack or cabinet.
3. The Jack Panel should have Icon label holders and designation labels as part of the standard device.
4. The modular outlets should be FCC CFR 47 part 68 subpart F and IEC 60603-7 compliant and should have 50 micro inch gold plated contacts.
5. The Jack Panel should be backwards compatible — can be used with modular cords for category 5e compatibility.
6. The Jack Panel should support universal wiring for both T568A and T568B termination methods.
7. The Jack Panel should incorporate shutters, if required in colors for easy identification purpose for superior aesthetics and dust exclusion when not equipped with patch cords.

8. The Jack Panel should also have Metal rear cable manager to properly guide cables to point of termination and come with individual application and colour icons for identification
9. The Jack Panel should support a strain relief mechanism to simplify and reduce installation time protecting the quality of the termination simultaneously. The Jack Panel should have individual jacks to allow for change-out in the event of damage to any jack- without disturbing the other jacks in the panel.
10. The jacks should have lead-frame design to ensure full compliance and consistency with category 6 specifications and should also be of TOOL FREE TERMINATION type
11. The Jack Panel should be 24 port configurations, ensuring superior cross-talk characteristics are maintained to assist in future support for 10G data applications.

NEAR END CROSS TALK PERFORMANCE

MARGIN AT 250 MHZ

Worst Case : 0.75b
Typical : 4.0db

RETURN LOSS

MARGIN AT 250 MHZ

Worst Case : +6.5db
Typical : +8.0db

FEXT LOSS

MARGIN AT 250 MHZ

Worst Case : +2.0db
Typical : +4.9

INSERTION LOSS

MARGIN AT 250 MHZ

Worst Case : +0.13db
Typical : +0.15db

Connecting Blocks

The connecting block shall facilitate cross-connection and/or inter-connection using jumper wire or patch cords.

Voice Termination and Cross-connects

The network cabling system shall be comprised of modular connectors in support of high-speed networks and applications designed for implementation on copper cabling.

The voice patch panel shall utilize fully interchangeable and individual connector modules that mount side-by-side to facilitate quick and easy moves, adds, and changes.

The panel should be designed using a high-density patch panel saving the space.

CAT 6 CABLE SPECIFICATION

CAT 6 cable should provide significant headroom above all TIA/EIA and ISO/IEC category 6 transmission performance specifications. The cable should meet or exceed the proposed requirements of ANSI/EIA/TIA568-B2.1 Transmission Performance Specifications for 4-Pair 100 □ Category 6 Cabling

Insulation

- Conductor Insulation:
Thermoplastic PE

Conductor

- 23-24 AWG solid bare copper

Isolation Member

- To maintain pair geometry before, during and after installation for optimal NEXT Loss performance

Rip Cord

- Should be applied longitudinally under cable jacket

HIGHLIGHTS

- It should be swept tested from 1 to 350 MHz
- Transmission performance should be verified
- It should have round jacket
- The jacket material should be lead free

PACKAGING

- 1000 ft. reel in a box or 3000 ft. reel
- Weight
Thermoplastic PE Jacket— 29-lbs/1000 ft.

STANDARDS COMPLIANCE

- ISO/IEC 11801: 2002 (Category 6)
- ANSI/TIA/EIA-568-B.2-1 (Category 6)

ETHERNET APPLICATIONS SUPPORT

- 1000BASE-T • 100BASE-T • 10BASE-T
- Should support any application designed for category 6 or lower cabling

Jacket

- Nominal Cable O.D.:
Thermoplastic PE Jacket — 0.222 in.
- Jacket Material:
PVC

Electrical Characteristics

| | | |
|--------------------------|---|--|
| DC Resistance | - | < 9.38 Ohm/328 ft. |
| DC Resistance Unbalance | - | 5% |
| Mutual Capacitance | - | 5.6nF/328 ft. |
| Capacitance Unbalance | - | <330 pF/328 ft. |
| Characteristic Impedance | - | $1 \leq f \leq 100$: $100 \pm 15\%$ |
| | - | $100 \leq f \leq 160$: $100 \pm 20\%$ |
| | - | $160 \leq f \leq 250$: $100 \pm 22\%$ |
| | - | $250 \leq f \leq 350$: $100 \pm 25\%$ |
| | - | CMP—70% CMR— 68% |
| NVP | - | CMP—70% CMR— 68% |
| LCL | - | 30-10Log(f/100)dB |

TRANSMISSION PERFORMANCE — GUARANTEED WORST CASE

| Frequency (Mhz) | Insertion Loss (db/328 ft) | NEXT Loss (db) | PS NEXT Loss (db) | ACR (db) | PS ACR (db) | ELF EXT (db) | PS ELFEXT (db) | Return Loss (db) | Propagation Delay (ns) |
|-----------------|----------------------------|----------------|-------------------|----------|-------------|--------------|----------------|------------------|------------------------|
| 1.0 | 2.0 | 77.3 | 75.3 | 75.3 | 73.3 | 70.8 | 68.8 | 20.0 | 550.0 |
| 4.0 | 3.7 | 68.3 | 66.3 | 64.5 | 62.5 | 58.8 | 56.8 | 23.6 | 532.0 |
| 10.0 | 5.9 | 62.3 | 60.3 | 56.4 | 54.4 | 50.8 | 48.8 | 26.0 | 525.4 |
| 16.0 | 7.5 | 59.2 | 57.2 | 51.8 | 49.8 | 46.7 | 44.7 | 26.0 | 523.0 |
| 20.0 | 8.4 | 57.8 | 55.8 | 49.4 | 47.4 | 44.8 | 42.8 | 26.0 | 522.0 |
| 31.25 | 10.6 | 54.9 | 52.9 | 44.3 | 42.3 | 40.9 | 38.9 | 25.0 | 520.0 |
| 62.5 | 15.2 | 50.4 | 48.4 | 35.1 | 33.1 | 34.9 | 32.9 | 23.5 | 518.6 |
| 100.0 | 19.6 | 47.3 | 45.3 | 27.7 | 25.7 | 30.8 | 28.8 | 22.5 | 517.6 |
| 125.0 | 22.2 | 45.8 | 43.8 | 23.7 | 21.7 | 28.9 | 26.9 | 22.0 | 517.2 |
| 160.0 | 25.4 | 44.2 | 42.2 | 18.9 | 16.9 | 26.7 | 24.7 | 21.5 | 516.8 |
| 175.0 | 26.7 | 43.7 | 41.7 | 17.0 | 15.0 | 25.9 | 23.9 | 21.3 | 516.7 |
| 200.0 | 28.7 | 42.8 | 40.8 | 14.1 | 12.1 | 24.8 | 22.8 | 21.0 | 516.5 |
| 250.0 | 32.6 | 41.3 | 39.3 | 8.8 | 6.8 | 22.8 | 20.8 | 20.5 | 516.3 |
| 300.0 | 36.1 | 40.1 | 38.1 | 4.0 | 2.0 | 21.3 | 19.3 | 20.1 | 516.1 |
| 350.0 | 39.4 | 39.1 | 37.1 | -0.3 | -2.3 | 19.9 | 17.9 | 19.8 | 515.9 |

PHYSICAL PROPERTIES

| | CMP | CMR |
|------------------------------|-----------------|---------------|
| Pulling Tension 25 lbf (max) | 25 lbf (max) | |
| Bend Radius | - 1 in. (min) | 1 in. (min) |
| Installation Temperature | - -32 to 140 °F | -4 to 140 °F |
| Storage Temperature | - -4 to 167 °F | -30 to 167 °F |
| Operating Temperature | - -4 to 140 °F | -30 to 140 °F |

Optical fiber product specifications

In addition to meeting the specifications outlined in ANSI/TIA/EIA-568-B.3 and ISO/IEC 11801:2000 Ed2.0, the requirements in this section must also be met for all applicable optical fiber products as listed below.

Connectors

All optical fiber connectors shall meet the following characteristics:

FIBRE ST AND SC CONNECTORS

1. The ST and SC multimode connectors should support a variety of termination methods...epoxy, anaerobic adhesive etc.
2. The adhesive system should not have a longer cure time (preferably 30 – seconds or less).
3. All connectors should utilize precision zirconia ceramic ferrules and include protective dust caps.
4. The precision zirconia ceramic ferrules utilized in ST and SC multimode connectors should enable a typical insertion loss performance of 0.10 dB and 30 dB, typical return loss, using a manual polishing method.
5. The Single mode connectors should typically achieve 0.20 dB insertion loss and 55 dB return loss using a simple manual polishing method.
6. The SC Duplex, SC Connector should be UL 94V-0 compliant and should allow each connector to be removed individually. The duplex connector should give access to user so that an individual connector can be removed and re-terminated without disturbing the adjacent connector
7. The ST coupling nut should be metallic to assure optimum durability and engagement. The ramps should be radial to facilitate mating/de-mating
8. The SC outer housing and connector body should be colour coded in accordance with ANSI/TIA/EIA-568-B.3 and ISO/IEC 11801:2002.
9. The strain and bend relief boots should be provided to improve plug-to-cable retention and to maximize performance by preventing fibre deformation caused by mechanical strain.
10. The SC simplex connectors should employ an outer housing that is colour-coded in accordance with TIA/EIA-568-B.3 and ISO/IEC 11801: Edition 2000 requirements (beige for multimode and blue for single mode).

Patch Cords/Pigtails

Fiber equipment cords shall possess the following characteristics:

FIBER CABLE ASSEMBLIES & PIGTAILS

1. The fiber used for cable assemblies should meet the IEEE 802.3 10 Gigabit Ethernet Standard as well as IEC-60793-2-10 and TIA-492AAAC specifications for laser bandwidth Differential Mode Delay (DMD) specifications.
2. The assemblies should meet or exceed all ANSI/TIA/EIA and ISO/IEC insertion loss and return loss requirements.
3. When used in a system these precision cable assemblies should be warranted for minimum 18 years or above.

4. The fiber optic cable assemblies should meet all Telcordia and ISO/IEC specifications for ferrule end face geometry – including radius of curvature, apex offset, and spherical undercut. The compliance to these is important to ensure minimum Return Loss, thereby reducing back reflection of laser energy which could degrade transmission performance or damage transceivers
5. The fiber optic cable assemblies should be available in 1.5, 3, and 5 meter standard lengths. Dust caps should be included as part of the standard shipment to protect polish from dirt and damage.
6. In a duplex jumper cord the duplex coupling mechanism should offer a polarity correction mechanism, which is independent of the connectors in the coupling.
7. The connectors used in the patch cord should be color coded as per ANSI/TIA/EIA-568-B.3.
8. It should exceed ANSI/TIA/EIA and ISO/IEC requirements for aging, exposure to humidity, temperature extremes, impact, vibration, coupling strength, and cable resistance to stress and strain Supports

Enclosures

All interconnect centers, panels and trays (units) shall provide cross-connect, interconnect, splicing capabilities and contain cable management for supporting and routing the fiber cables/jumpers. All the enclosures

1. Should not be bigger than one rack mount space and accommodate up to 24 ports for SC, 48 ports for MT-RJ or LC adapter plates, or 24 ports for ST or FC adapters plates.
2. Should take in duplex adapter
3. Should have preloaded adapter plates with ST and SC fiber adapters in 6 and 8-port version, as well as a 12 port version for the SC, MT-RJ and LC adapters.
4. Should have blank adapter plates for future growth of the fiber infrastructure.
5. Should have six and eight port fiber adapter plates, which allow for color coding connectors.
6. Should have fiber adapter plates with snap-in installation and one-finger removal.
7. Should accommodate hybrid adapter plates for ST-to-SC or SC-to-ST connections.
8. Be modular in design with internal fiber managers that provide slack storage to comply with fiber bend radius and the recommended slack storage length.
9. Should have a snap-on front shield to be used as a labeling surface and to protect jumpers. This shield should also be relocate able to another position during termination to maintain circuit identification.
10. Should accommodate a splice tray for mechanical or fusion splices.
11. Should be available with a drawer mechanism, which allows the panel to slide forward or to the rear, and has defeatable latches to allow removal from the rack or cabinet.
12. Must be certified to United States Standards and C22.2 Canadian Telecommunications Standards.

Cable

In addition to meeting the applicable performance specifications, all optical fiber cable shall be appropriate for the environment in which it is installed.

FIBER CABLE TO TENENT OFFICE AND COMMERICAL SPACE – SHOULD BE USED WITH SUITABLE CONDUITS.

MULTIMODE OPTICAL FIBER CABLE

Fibre Optic Cable OM3 Multimode- 12 Core Indoor Fibre cable

| | |
|---|----------------|
| The Indoor Tight buffered Fibre optic cable. | |
| The Fibre should be color coded with LSZH (Low smoke Zero Halogen) outer sheath | |
| Aramid Yarn should be used for strength and flexibility | |
| Orange color outer sheath should be used for Multi mode fiber | |
| <u>Mechanical Characteristics</u> | |
| Max Tensile Load | |
| Short Term | 1000N |
| Long Term | 300N |
| Minimum Bend Radius | |
| Loaded | 3.6CM |
| Installed | 2.4CM |
| <u>Thermal Characteristics</u> | |
| Storage Temperature | -40°C to +70°C |
| Operating Temperature | -20°C to +70°C |
| Installation Temperature | 0°C to +70°C |
| <u>Optical and Transmission Performance</u> | |
| Fiber Type (µm) | 50/125µm OM3 |
| Maximum Attenuation (db/km) 850/1300nm | 3.5/1.5 |
| Typical Attenuation (db/km) 850/1300nm | 3.5/1.0 |
| Guaranteed Bandwidth 850/1300nm | 2000/500 |

SINGLE MODE OPTICAL FIBER CABLE

Single mode optical fiber cables shall meet all of the requirements delineated within the specified Industry Requirements. Attenuation and Zero Dispersion limits are noted below for convenience:

| Minimum Performance Parameters for SM Cables | | | | | |
|--|---------------|-----------------------------|--------|---------------------------------|---|
| Fiber | Cable Type | Maximum Attenuation (dB/km) | | Zero Dispersion Wavelength (nm) | Zero Dispersion Slope (nm ² •km) |
| | | 1310nm | 1550nm | | |
| Single mode | Inside Plant | 1.0 | 1.0 | 1300-1324 | < 0.093 |
| | Outside Plant | 0.5 | 0.5 | | |

Attenuation:

Cables shall perform in accordance with the attenuation limits as noted above when tested per ANSI/EIA/TIA-455-46, -53, -61 or -78 (as applicable).

Zero Dispersion Wavelength and Slope:

Cables shall perform in accordance with the Zero Dispersion wavelength and slope limits as noted above when tested per ANSI/EIA/TIA-455-168, -169, or -175 (as applicable).

Mounting Options**Faceplates****FACE PLATE SPECIFICATION (WORK AREA COMPONENT)**

1. The work area, faceplates should offer a sleek, clean appearance for mounting Outlets. The designation labels cover the mounting screws (should be included as part of the standard equipment) and provide ample circuit identification.
2. The faceplates should offer write-on circuit designation labels (as part of the standard equipment) protected by clear plastic cover concealing the mounting screws.
3. The faceplates should be available in white versions,
4. The faceplates should be UV resistant, should be made using high impact plastic to prevent color fading and to provide added durability.
5. The faceplates should include quick pressure-release designation label covers for quick, tool-less removal.
6. The information outlets should be easily snapped out from the back of faceplates making moves, adds, and changes quick and easy.
7. Faceplate should be available in 1,2,4 Gang

SPECIFICATION FOR TELEPHONE KRONE BOXES:

The Krone boxes made out of Powder coated metal box with suitable fixing accessories. The provision shall be made for terminating incoming and outgoing cables. Suitable size connectors shall be provided as per the tender requirement.

TECHNICAL SPECIFICATIONS FOR SWITCHES, RACKS, CAT 6 CABLING, IP PBX, IP TELEPHONE ETC**Technical Specifications for Core Switch**

| Category | Technical Specifications | Compliance with necessary documentary evidence |
|--|---|--|
| Key Requirements | <ul style="list-style-type: none"> • Core Switch can be offered as a chassis or stackable switch • Solution provided should not have a single point of failure and all components should be provided in a redundant configuration. • Chassis based solution should be provided in dual switch configuration with redundant CPU per switch. • Redundant Power Supply for all switches in the core. • Power Supply should be internal and hot swappable. • Port requirements per Core Switch <ul style="list-style-type: none"> • 48 x 10/100/1000BaseT modules • 24 x 1Gig SFP Slots • 10 x 10Gbps Slots for future expansion. | |
| Performance requirements for stackable option | <ul style="list-style-type: none"> • 380Gbps switching fabric per switch • 170Mpps Forwarding throughput per switch • Stacking support for up to 8 switches in a stack • Stacking should use dedicated stacking ports and should not be a virtual switch clustering or similar technology using uplink ports. • The stack bandwidth should be minimum 140Gbps per switch and should support up to 1Tbps for a full switch stack. • Solution provided should support active-active configuration with sub-second failover. • Solution should support distributed forwarding per switch and any additional software/hardware required for the same should be quoted. | |
| Performance requirements for chassis based option | <ul style="list-style-type: none"> • In case of a chassis based option, switch should support a minimum backplane of 700Gbps per switch • 350Mpps Forwarding throughput per switch • The backplane connectivity from each module should be minimum 80Gbps • Solution provided should support active-active configuration with sub-second failover. • Solution should support distributed forwarding per module and any additional software/hardware | |

| | | |
|--------------------------------|--|--|
| | required for the same should be quoted. | |
| Layer 2 Feature support | <ul style="list-style-type: none"> • 255 Port based / Protocol based VLAN's • Voice VLAN's • IPv6 VLAN's • 802.1q VLAN tagging • 8000 MAC addresses • IGMP v1/v2 Proxy and Snooping • Spanning Tree Protocol (802.1d) • Rapid Spanning Tree Protocol (RSTP or IEEE 802.1w) • Multiple Spanning Tree Protocol (MSTP or IEEE 802.1s) • Fast Start with Spanning Tree • Standard Spanning Tree Groups (IEEE 802.1s) • Link Aggregation Control Protocol (LACP or 802.3ad) • 802.1ab auto-discovery protocol, Auto-topology • Multiple Link Trunk (32 trunks; 8 ports/trunk) | |
| Layer 3 Feature Support | <ul style="list-style-type: none"> • Static Routes • RIPv1/v2 • OSPF • VRRP | |
| Security Features | <ul style="list-style-type: none"> • RADIUS Authentication • RADIUS Accounting (CLI and SNMP) • 802.1x Extensible Authentication Protocol • 802.1x Multiple Host Multiple Authentication (MHMA) per port • Guest VLAN with EAP enabled on port • Multiple Host Single EAP authentication • MAC based EAP Authentication (Clientless EAP) • RADIUS assigned VLAN in MHMA mode • MAC Limitation per port • User Based Policy Support • HTTPS (SSL based Browser Support) • SSHv2 • RADIUS authentication • SNMPv3 • MAC address based security • Destination MAC Address based Filtering | |

| | | |
|---------------------|---|--|
| | <ul style="list-style-type: none"> • HTTP Port Number Change • Ingress and egress port mirroring. • DHCP Snooping • Dynamic ARP Inspection • IP Source guard | |
| QoS Features | <ul style="list-style-type: none"> • 802.1Q/p-based Layer 2 QoS • DSCP-based Recognition • DSCP-based Marking-Remarking • Priority Marking • L2-L4 Policing • IPv6 Classification and Marking • Mac Based Filtering • Port Based Shaping (all ports) • Offset Filtering (First 80 Bytes) • 8 hardware queues per port • Diffserv Code Point (DSCP) based recognition • Broadcast and Multicast Rate Limiting • Strict Priority Queueing • Weighted Round Robin Queueing • Bounded Round Robin • 802.3x Flow Control on GE Ports | |
| Management | <ul style="list-style-type: none"> • Default IP address • Web-based network management • Command line interface • Device Manager • Four groups of Remote Monitoring (RMON) <ul style="list-style-type: none"> • Alarms • Events • History • Statistics • 802.1AB Standards based Autotopology • 802.1AB MED • 802.1AB Location TLV • TACACS+ • Simple Network Time Protocol (SNTP) • Simple Network Time Protocol (SNTP) Timezone Support • BootP/TFTP Firmware upgrades • Integrated Time Domain Reflectometer • Should have Netflow support and have ability to show flow statistic on the switch web based management • Should also support full export of flow management data to external Netflow collector. • CPU Utilization – CLI and Web Management | |

| | | |
|--|---|--|
| | <ul style="list-style-type: none">• Should show temperate on switch via CLI and Web Management• Port Mirroring<ul style="list-style-type: none">• Many to One• Many to Many | |
|--|---|--|

Technical Specifications for Edge Switch

| Category | Technical Specifications | Compliance with necessary documentary evidence |
|---------------------------------|---|--|
| Interface requirements | <ul style="list-style-type: none"> • 24 10/100Base-T ports with Power over Ethernet (PoE) • 2 SFP combo ports • 2 stacking ports (exclusive of uplink ports) • USB Port | |
| Performance requirements | <ul style="list-style-type: none"> • 48.8Gbps switching fabric • 6.6 Mpps Forwarding throughput • 8000 MAC addresses • Switch should be capable of supporting 15.4W per port on all 24 ports simultaneously. This is a mandatory requirement for high end cameras. Additional power supply if required to meet this requirement should be quoted per switch. | |
| Stack Features | <ul style="list-style-type: none"> • 40Gbps stacking bandwidth • Stacking support for up to 8 switches in a stack • Stacking should use dedicated stacking ports and should not be a virtual switch clustering or similar technology using uplink ports. • Stacking should allow creating link aggregated ports across a stack of switches for increased bandwidth. | |
| Layer 2 Feature support | <ul style="list-style-type: none"> • 255 port based VLAN's • Protocol based VLAN's • Voice VLAN's • IPv6 VLAN's • 802.1q VLAN tagging • IGMP v1/v2 Proxy and Snooping • Spanning Tree Protocol (802.1d) • Rapid Spanning Tree Protocol (RSTP or IEEE 802.1w) • Multiple Spanning Tree Protocol (MSTP or IEEE 802.1s) • Fast Start with Spanning Tree • Standard Spanning Tree Groups (IEEE 802.1s) • Link Aggregation Control Protocol (LACP or 802.3ad) • 802.1ab auto-discovery protocol, Auto-topology • Multiple Link Trunk (6 trunks; 4 ports/trunk) | |

| | | |
|--------------------------------|---|--|
| | <ul style="list-style-type: none"> • Distributed Multilink Trunk support to have ports in an aggregation group spread across a stack. • Support for Jumbo Frames on Gigabit uplinks | |
| Layer 3 Feature Support | <ul style="list-style-type: none"> • Should support static routing. | |
| Security Features | <ul style="list-style-type: none"> • RADIUS Authentication • 802.1x Extensible Authentication Protocol • 802.1x Multiple Host Multiple Authentication per port • 802.1x Multi Host Single Authentication • 802.1x NEAP Support (MAC Authentication) • Guest VLAN with EAP enabled on port • MAC Limitation per port • HTTPS (SSL based Browser Support) • SSHv2 • RADIUS authentication • SNMPv3 • Destination MAC Address based Filtering • Ingress and egress port mirroring. • BPDU Filter • DHCP Snooping • Dynamic ARP Inspection • Support for client-less end point security with policy enforcement using VLAN transition. | |
| QoS Features | <ul style="list-style-type: none"> • 802.1Q/p-based Layer 2 QoS • DSCP-based Recognition • DSCP-based Marking-Remarking • Priority Marking • L2-L4 Policing • IPv6 Classification and Marking • Mac Based Filtering • Layer 2 Filters • IP Filters • Support Offset filtering up to 128bytes • Port Based Shaping (all ports) • 4 hardware queues per port • Diffserv Code Point (DSCP) based recognition • Broadcast and Multicast Rate Limiting | |

| | | |
|-------------------|--|--|
| | <ul style="list-style-type: none"> • Strict Priority Queueing • Weighted Round Robin Queueing • Bounded Round Robin • 802.3x Flow Control on GE Ports • Auto detect and config of IP phones via MAC / 802.1ab | |
| Management | <ul style="list-style-type: none"> • Default IP address • Web-based network management • Command line interface • Device Manager • Four groups of Remote Monitoring (RMON) <ul style="list-style-type: none"> • Alarms • Events • History • Statistics • 802.1AB Standards based Autotopology • Simple Network Time Protocol (SNTP) • BootP/TFTP Firmware upgrades • Integrated Time Domain Reflectometer • Auto unit replacement for image and configuration in stack for new switches / replacement switches • Should support USB staging initial config can be taken from USB memory stick • Should support option to download new image without resetting the switch and delayed restart with timer | |

TECHICAL SPECIFICATION FOR IP PBX:**Main System Configuration**

- SIP based IP PBX based on open standards.
- Should be scalable to support up to 1000 IP Phones(min)
- Licenses for 150 IP Phones
- Should have a minimum 100 party Meet-Me conference bridge.
- Soft Phone with Video support for every user.
- Unified Messaging and Voice Mail for all users
- Fixed Mobile Convergence (Find Me / Follow-Me) feature for all users
- PBX should be fully redundant with redundant call servers.

Core Calling Features

- Transfer (consultative & blind)
- Call coverage
- Call hold / retrieve
- Consultation hold
- Music on Hold for IETF standards compliant phones
- Admin or user configurable Busy Lamp Field (BLF) presence and softkeys
- Up loadable music file
- Conferencing Support
 - Scheduled Conferencing
 - Meet-Me Conferencing
 - Ad-Hoc Conferencing
- Call pickup (global and directed call pickup)
- Call park & retrieve
- Hunt groups
- Intercom with auto-answer (bi-directional)
- SIP URI dialing
- SIP PBX should support any third party SIP phones without any additional hardware
- CLID (Calling Line Identification)
- CNIP (Calling party Name Identification Presentation)
- CLIP (Call Line Identification Presentation)
- CLIR (Call Line Identification Restriction)
- Per gateway CLIP manipulation
- Call waiting / retrieve
- Do not Disturb (DnD)
- Forward on busy, no answer, do not disturb
- Multiple line appearances
- Multiple calls per line
- Multiple station appearance
- Outbound call blocking
- Redial
- Call history (dialed, received, missed)
- Auto off-hook / ring down
- Incoming only
- Configuration of individual Speed Dial softkeys
- Auto-generation of Directory information
- Fixed Mobile Convergence

User Self-Control (User Web Configuration Portal)

- Every user on the system gets access to a personal Web user portal for self-management and control
- Management of voicemail
- Configuration of unified messaging preferences
- Time based find-me / follow-me
- Flexible configuration of call forwarding
- Personal call history
- Personal phone book, speed dial and presence management
- ACD presence and supervision capabilities
- Individual phone management

Superior Voice Quality

- Peer-to-peer media routing for best quality (media not routed through the SIP server)
- Unmatched voice quality with lowest delay and jitter
- Support for any codec supported by the phone or gateway (including video)
- Support for HD Voice
- Codec negotiation (no transcoding required)
- User Management
- Create a user, provision a phone and assign a line in only three clicks – easy!
- Numeric or alpha-numeric User ID
- User PIN management (UI or TUI)
- Aliasing facility (numeric and alpha-numeric aliases)
- Extension and alias uniqueness assurance
- Granular per user permissions
- Call permissions:
 - 900 Dialing
 - International Dialing
 - Long Distance Dialing
 - Mobile Dialing
 - Local Dialing
 - Toll Free Dialing
 - Forward Calls External
- System permissions:
 - User has voicemail inbox
 - User listed in auto-attendant directory
 - User can record system prompts
 - User has super user access
 - User allowed to change PIN from TUI
- Custom permissions as defined by the admin
- Supervisor permission for groups (e.g. Call Center supervisor)
- SIP password management for security
- User groups with group properties
- Per user call forwarding (follow me)
 - To local extension, PSTN number, or SIP address
 - Based on user or admin defined time schedules
 - Parallel or serial ring
 - Allows definition of ring time before trying next number
 - Allows several forwarding destinations
 - Follow-me configuration using user portal
- Extension pool with automatic assignment
- Per user Caller ID (CLID) assignment
- Per user Caller ID blocking

Dial Plan

- Easy to use GUI based dial plan manipulation
- Time-based dialing rules with different admin defined schedules
- Rules based least cost routing
- Automatic gateway redundancy and failover
- Specific E911 routing
- Permission based rules
- Prefix manipulation
- Dialplan templating for international dial plans
- Specify internal extension length
- ISN dialing based in ITAD numbers. See freenum.org
- Redirector plugins - any imaginable dial rule can be added as a plugin

Directory, Softkeys, Speed Dial

- Automated generation of directory information per user or per user group
- Creation and Management of many different directories (per user, per user group, per location, etc.)
- Automated provisioning of directory information into user's phones
- Allows adding contacts to the directory from a .csv file (Excel)
- User configurable speed dial (internal / external numbers, SIP URIs)
- Speed dial generated server side and backed up
- Auto-provisioning of speed dial to phones
- User configuration of Busy Lamp Field (BLF) to monitor presence of other users or phones (e.g. attendant console)

PSTN Trunking

- Should supports any 3rd party SIP compliant gateway
- Gateways can be in any location
- Gateway selection per dialing rule
- DID
- Local DID per gateway
- DNIS
- CLIP Management
- User CLIP
- Gateway default CLIP
- Prefix stripping / appending
- Per gateway CLIR
- Automatic Route Selection (ARS)
- Automatic failover if unavailable
- Automatic failover if busy
- FAX support

SIP Trunking

- SIP call origination & termination
- Branch office routing
- Proxy to proxy interconnect using ACLs
- Least-cost-routing (LCR)
- Mixing of PSTN trunks with SIP trunks
- TLS support for secure signaling

- Route header for flexible call routing through an SBC
- Flexible rules for SBC selection (route selection)

Analog Lines (FXS)

- Supports any SIP compliant FXS gateway
- FAX support
- Analog cordless phone support
- Supports analog speakerphones
- Plug & play management of FXS gateways

High Availability

- Should be a fully redundant call control system
- Load balance under normal operating conditions
- Geographic dispersion of redundant systems
- Real-time synchronization of state information
- Reports on load distribution

Call Detail Records collection and reporting

- Call State Events (CSE) collected for all signaling activity
- Processing of CSEs into CDRs
- All data stored in a database at all times
- Supports redundant call control
- Historic Call Detail Record reporting in real-time
- Monitoring of currently active (on-going) calls
- Export of active and historic CDRs to Excel (.csv file)
- Direct database access for reporting application (e.g. Crystal Reports, Jasper Reports)
- SOAP Web Services access to CDR data
- Individual call history per user in the user portal

Security

- All outbound calls authenticated
- Secure user password management
- DoS attack prevention
- HTTPS secure Web access
- TLS based signaling for SIP trunks

System Administration Features

- Browser based configuration and management
- Several admin accounts
- LDAP integration
- SOAP Web Services interface
- CSV import and export of user and device data
- Integrated backup & restore
- Scheduled backups
- Diagnostics
- Display active registrations
- Display job status
- Status of services
- Snapshot logs for debugging

- Logging (customizable log levels, message log per service)
- Display active calls
- Domain Aliasing
- Support for DNS SRV
- Support for DNS NAPTR based call routing
- Server statistics (integrated graphs and SNMP)
- Login history report (successful and unsuccessful)
- Automated testing of network services (DHCP, DNS, NTP, TFTP, FTP, HTTP) for proper configuration

Plug & Play Device Management

- Auto-discovery of phones & gateways on the LAN
- Plug & play management of phones
- Plug & play management of PSTN gateways
- Auto-generation of phone / gateway config profile
- Auto-pickup of profile by phone / gateway
- Centralized management of all the parameters
- Centralized backup and restore of all the configs
- Auto-generation of lines by assigning users to devices
- Device group management & properties
- Firmware upgrade management

Voicemail Subsystem

- Integrated voicemail system
- Voicemail system can be localized per user by installing language packs
- Should support up to 1000 voicemail boxes.
- Browser based user portal for voicemail management
- Message Waiting Indication (MWI)
- User configurable distribution lists
- Unified Messaging:
- Email notification of new voicemail messages
- Forwarding of message as .wav file
- Supports several parallel notifications
- Manage folders: Folders for message organization
- Manage greetings: Multiple customizable greetings
- Operator escape from anywhere
- Remote voicemail access
- Unlimited number of inboxes
- Between 60 and 120 virtual media server ports per server
- Message store only limited by disk size
- Auto-removal of deleted messages
- Daily report on disk usage sent to admin

Personal Auto Attendant

- User configurable personal auto-attendant for every user on the system
- Up to 10 individual forwarding choices (keys 0 through 9)
- User can record greeting that corresponds with key configuration
- Individual zero-out to a personal assistant or receptionist
- Individual selection of language based on installed language packs
- Personal greeting

Auto Attendant Features

- Unlimited number of auto-attendants
- Dial by extension and name
- Night and holiday service
- Special auto-attendant
- Transfer on invalid response
- Nested auto-attendants (multi-level)
- Fully customizable actions:
 - Operator
 - Dial by Name
 - Repeat Prompt
 - Voicemail login
 - Disconnect
 - Auto-Attendant
 - Go to Extension
 - Deposit Voicemail
- Up loadable custom prompts
- Configurable DTMF handling

Presence Server Features

- Centralized presence server based on SIP/SIMPLE
- Compatible with Broad soft or IETF implementations
- Centralized management of resource lists for dialog events
- Busy Lamp Field (BLF) feature based on presence
- Support for Attendant Consoles
- ACD call center agent sign in / out

Hunt Groups

- Unlimited number of hunt groups
- Serial and parallel forking (rings sequentially or at the same time)
- Configurable ring time per attempt
- Enable / disable user call forwarding rules while hunting
- Flexible configuration of destination if no answer

Call Park Server

- Unlimited number of park orbits
- Visual indication on the phone of the state of the park orbit using the presence server (BLF)
- Music on park
- Up loadable music file
- Configurable call retrieve code
- Configurable call retrieve timeout
- Automatic park timeout with configurable time
- Configurable park escape key
- Allow multiple calls on one orbit

Group Paging Server

- Integrated group paging server
- Unlimited number of paging groups
- Supports regular SIP phones using auto-answer

- Supports dedicated in-ceiling devices (SIP)
- Configurable paging prefix

Call Center Server (ACD)

- Supports several ACD servers
- ACD server collocated or on a different server hardware
- Several (unlimited) queues per server
- Several lines per queue
- Support trunk lines (many calls per line) or single call per line
- Dedicated overflow queues or overflow to hunt group or voicemail
- Configurable call routing scheme per queue:
 - Ring all
 - Circular
 - Linear
 - Longest idle
- Agent barge in (early termination of welcome message if agent becomes available)
- Agent presence monitor using presence server
- Separate welcome and queue audio
- Call termination tone or audio
- Configurable answer mode
- Agent wrap-up time configurable per queue
- Auto sign-out of agents if calls are not answered
- Configurable maximum ring delay
- Configurable maximum queue length
- Configurable maximum wait time until overflow condition
- Unlimited number of agents per queue
- Statistics:
 - Agent statistics
 - Call statistics
 - Queue statistics
- ACD historic reporting
- Supervisor authorization for agent monitoring
- ACD historic reports for agents, calls, queues
- All reporting stored in database for post-processing if needed.

SPECIAL NOTE: THE IP PBX SHOULD BE CONFIGURED TO OPERATE WITH ANY SIP IP PHONES AVAILABLE IN THE MARKET AT THE TIME OF INSTALLATION, TESTING & COMMISSIONING.

TECHNICAL SPECIFICATION FOR TYPE 1 - IP PHONE

- Multi-line intermediate-level desktop IP phone
- Supports up to four line/programmable feature keys, eight fixed telephony keys, four context-sensitive soft keys and six shortcut/feature keys.
- 5 lines x 25 characters with anti-glare screen
- Should have flexible two-position adjustable foot stand to optimize viewing under varied lighting conditions.
- Integrated headset and speakerphone with support for a high-quality, two-way speakerphone (hands-free)
- Integrated 10/100Base-T Ethernet switch with LAN and PC ports
- Should supports 802.3af standards-based **PoE** and local AC power via power adapter.

- Should support optional minimum Key Expansion Modules (minimum 15 Keys per module)
- Fixed keys
 - Handsfree
 - Headset
 - Volume Up and Down
 - Mute
 - Hold
 - Messages
 - Redial
 - Directory
 - Conference
 - Services
 - Quit
- Four context-sensitive soft-label keys
- Should supports third-party wired headsets
- Audio Quality of Service
 - G.711 a- and μ -g-law, G.723.1 and G.729a and Annex B
 - 802.1p/Q, DiffServ and VLAN tagging of telephony port traffic
 - Supports echo cancellation and silence suppression
- Administration and security
 - Static, Partial and Full Dynamic Host Control Protocol (DHCP) address assignment (Full DHCP should be the default)
 - 802.1ab Link Layer Discovery Protocol (LLDP) for network auto-discovery and inventory management
 - 802.1x and Extensible Authentication Protocol (EAPMD5) for network authentication and access control
 - Signaling path encryption with support for 128-bit Advanced Encryption Standard (AES)
 - Media path encryption with RFC 3711-compliant Secure Real-time Protocol (SRTP) pre-shared key and public key infrastructure
 - Proactive Voice Quality Management (PVQM) for enhanced administration and diagnostics
- Should comply with Reduction of Hazardous Substances (RoHS) – (6 of 6) as part of European Union Environmental Directive

TECHNICAL SPECIFICATION FOR TYPE 2 - IP PHONE

- Multi-line intermediate-level desktop IP phone
- Supports up to ten line/programmable feature keys, eight fixed telephony keys, four context-sensitive soft keys and six shortcut/feature keys.
- 9 lines x 25 character with anti-glare screen
- Should have flexible two-position adjustable foot stand to optimize viewing under varied lighting conditions.
- Integrated headset and speakerphone with support for a high-quality, two-way speakerphone (hands-free)
- Integrated 10/100Base-T Ethernet switch with LAN and PC ports
- Should supports 802.3af standards-based PoE and local AC power via power adapter.
- Should support optional minimum Key Expansion Modules (minimum 15 Keys per module)

- Fixed keys
 - Handsfree
 - Headset
 - Volume Up and Down
 - Mute
 - Hold
 - Messages
 - Redial
 - Directory
 - Conference
 - Services
 - Quit
- Four context-sensitive soft-label keys
- Should supports third-party wired headsets
- Audio Quality of Service
 - G.711 a- and μ -g-law, G.723.1 and G.729a and Annex B
 - 802.1p/Q, DiffServ and VLAN tagging of telephony port traffic
 - Supports echo cancellation and silence suppression
- Administration and security
 - Static, Partial and Full Dynamic Host Control Protocol (DHCP) address assignment (Full DHCP should be the default)
 - 802.1ab Link Layer Discovery Protocol (LLDP) for network auto-discovery and inventory management
 - 802.1x and Extensible Authentication Protocol (EAPMD5) for network authentication and access control
 - Signaling path encryption with support for 128-bit Advanced Encryption Standard (AES)
 - Media path encryption with RFC 3711-compliant Secure Real-time Protocol (SRTP) pre-shared key and public key infrastructure
 - Proactive Voice Quality Management (PVQM) for enhanced administration and diagnostics
- Should comply with Reduction of Hazardous Substances (RoHS) – (6 of 6) as part of European Union Environmental Directive

TECHNICAL SPECIFICATION FOR NETWORK MANAGEMENT SOFTWARE (NMS)

The bidder should suggest the NMS software for the monitoring of the network infrastructure. Any hardware server required for installing the NMS server should also be supplied by the bidder.

- Should support Network Discovery, Topology Visualization, Fault, and Performance Management for a minimum of 500 SNMP Devices with option to upgrade as and when the network grows
- Should support discovery of all devices including switches and IP Phones quoted for the requirement of TIDEL PARK.
- Should have HTTPS web client for access from anywhere in the network
- Device Performance and Monitoring feature
- L2 and L3 Topology Discovery and Visualization
- Application and Server Discovery and Visualization
- Inventory Viewing / Reporting / Exploring
- Syslog Viewer / Exporter
- Event Correlation and Analysis
- Performance Data Exporting in HTML, CSV or XML formats

Technical Specification for Video conferencing:**Video Specifications**

Transmission Speed H.323: 64 Kbps - 4Mbps, ISDN 64 Kbps -512 Kbps (4xBRI)

Video Standards

H.261, H.263, H.263+/++ H.264 - up to 2Mbps outgoing

Live Video Resolution

QCIF (176 x 144 pixels), QVGA (320 x 240 pixels), CIF (352 x 288 pixels), SIF (352 x 40 pixels), VGA (640 x 480 pixels), 4CIF (704 x 576 pixels), 4SIF (704 x 480 pixels),
720p (1280 x 720 pixels) incoming only

Video Frame Rate

Up to 10 fps: 64 Kbps, Up to 20 fps: 96 to 192 Kbps, Up to 30 fps: 256 Kbps and higher

Video Inputs

1 Composite and S-Video

Video Outputs

1 each: S-video, Composite, Digital Video Interface (DVI), VGA

Video Features

Video device discovery Automatic NTSC/PAL detection Unlimited number of video devices supported

Audio Specifications Audio Features

Full duplex echo cancellation Automatic noise suppression (ANS) Automatic gain control (AGC)

Audio device discovery, Audio tuning wizard, Unlimited number of audio devices supported Headset and speaker profiles, Voice Activity Detection (VAD)

Audio Standards

20Khz: AAC-LD, 14Khz: G.722.1 Annex C, 7 Khz: G.722, G.722.1, 3.4Khz: G.711, G.723.1, G.728, G.729, AMR (3G)

Data Specifications

Data Sharing Methods, Laptop plug in (via Tabletop Pod) USB storage key, Documents: PPT, PPS, Video clips (AVI, MPEG, WMV, etc.) Audio clips (WAV, MP3), Graphic files (BMP, GIF, TIF, etc.), HD DualStream™, Sharing of file, or the VGA input, H.239 support, Tandberg DuoVideo support Sending and receiving capability 1 live video source + 1 data source Resolutions supported: XGA, SVGA, VGA, CIF, QVGA, QCIF, 4CIF

Networking Specifications Standards Supported

ITU-T: H.323 v4.2, H.281 Annex Q (FECC), ISDN: H.320, H.221, H.242, H.230

H.323 QoS Features

DiffServ, Precedence, Firewall port sync, NAT IP address mask, Port pin holing Adaptive Bandwidth Adjustment, Packet loss recovery (FEC), Packet ordering, Packet duplication control, Jitter correction, Lip sync correction, Overhead prediction Max packet size adjustment

Peripheral Specifications Pan-Tilt-Zoom Camera Unit

Picture - 1/4-color CCD, Focal length - 3.1mm to 31mm, Pan-Tilt range - +/-100o Pan, +/-25o Tilt, Zoom range - 10x (optical), 40x (digital), Horizontal resolution 460 TVL (PAL), 470 TVL (NTSC)

Monitors Configurations

Single DVI, VGA or TV Dual: DVI + VGA, Dual: VGA + TV Dual: DVI+TV

Features Specifications Dialing Modes

Manual, Speed dial, Personal address book Online directory Multicast chair Broadcast

Security

Encryption using H.235 DES, 3DES — Firewall traversal — Network address translation, Support restricted access to users via admin

Control

International remote control Embedded web-based management

Directory Services

1000+ local number directory, 10,000+ global number directory , H.350 support LDAP online directory support, - OpenLDAP - Microsoft ILS, SiteServer, Active Directory and Exchange - Netscape Directory Search and filter queries

Environmental

0 - 40°C temperature, power supply Operating voltage: 230V, Operating frequency: 50 Hz.

Language Support English, French, German, Italian, Spanish (Spain and Latin), Portuguese (Brazil), Chinese and Japanese

Essential Features of video Conferencing System

- The device should have recording capability both as standalone endpoint and in a multi party conference session. Minimum of 100 hrs is mandatory. Should be capable to send recorded files as an attachment.
- TV-quality video and 720p incoming
- The device should incorporate H.239 for simultaneous sending and receiving video + data streams. The device should support both Laptop and USB Port (for Pen drive) and all major file formats [.doc/ppt/xls/]
- CD-quality audio using 20 KHz ultra-wide band audio
- Support encrypted conferences using the H.235 encryption standard
- Should have session streaming using Windows Media Player which allows any system with the Microsoft™ media player application to view an ongoing session from the device.
- The device should be capable to connect 6 locations at a time with full Video / Audio Transcoding and should support continuous presence.
- Native 16:9 wide screen display support
- Dual monitor support
- Web-based management for easier control and administration
- H.264 video support up to 4Mbps and ISDN up to 512Kbps (4xBRI)
- Should have Multicast, Interactive Multicast and Windows Media Streaming capabilities.

Technical Specification – 65” LCD Display

- Over 900 Lines Moving Picture Resolution with 480Hz Sub-field Drive* and 24p Real Cinema. * With Intelligent Frame Creation
- High Contrast 1,000,000 : 1(Native 30,000 : 1)
- Superb Colour reproduction with Digital Cinema Colour and 5,120 Equivalent Steps of Gradation
- Smart Networking HD Photo Viewer (JPEG) and AVCHD playback
- SRS TruSurround XT
- Horizontal Arch Design

| | |
|---|--|
| Display | |
| Screen Size | 65"(165 cm) diagonal |
| Screen Aspect | 16 : 9 Wide |
| Panel | G11 Progressive Full-HD Plasma Display Panel |
| Number of Pixels | 2,073,600 (1,920 x 1080) pixels |
| Colour System | NTSC/PAL/PAL 60Hz/SECAM/M-NTSC |
| Applicable PC signals | SXGA (1280x1024) |
| Moving Picture Resolution | Over 900 lines |
| Contrast Ratio (in dark surroundings) | Native: 30,000:1; Dynamic: 1,000,000:1 |
| Shades of Gradation | 5,120 equivalent steps of gradation |
| Intelligent Frame Creation | YES |
| 24p Real Cinema | YES |
| 24p Playback | YES |
| Digital Cinema Colour | YES |
| Deep Colour (10-bit) | YES |
| x.v.Colour | YES |
| 3D Colour Management | YES |
| Sub Pixel Control | YES |
| Motion Pattern Noise Reduction C.A.T.S. (Contrast Automatic Tracking System) | |
| Video Noise Reduction | |
| 3D Comb Filter | |
| Picture Mode | Standard/Dynamic/Cinema/Eco |
| Sound | |
| Speaker System | Smart Sound Speaker System |
| Speakers | Woofer x 2(L,R); Tweeter 2(L,R) |
| Audio Output | 31 W [(13W + 2.5 W) x 2] , 10% THD |
| Sound Mode | Music/News/Cinema |
| SRS TruSurround XT | |
| Surround | |
| Terminals | |
| SD Memory Card Slot (SDHC Compatible) | (AVCHD playback) |

| | |
|---|--|
| HDMI Input | 4(1 front, 3 rear) [ver. 1.3 with Deep Colour & x.v.Colour] |
| Composite Video Input | AV1/2/3/4: RCA phono type (3 rear,1 front) |
| S-Video Input | AV3/4 : Mini DIN 4 -pin (1 rear,1 front) |
| Audio Input (for Video) | AV1/2/3/4 : RCA phono type connectors (L, R) (3 sets rear,1 front) |
| PC Input | Mini D-sub 15-pin x 1 (rear) (Audio input for PC: co-use with AV2 audio input) |
| Component Video Input | AV2/3 : RCA phono type [Y , PB/CB, PR/CR] (2 sets rear) |
| Audio Input (for HDMI--COMMA-- PC-- COMMA-- Component) | RCA phono type connectors (L, R) x2 sets (rear x 1 set, front x 1 set) |
| Monitor Out | RCA phono type (1 rear) |
| Audio Output | RCA phono type connectors (L, R) (1 set, rear: co-use with monitor out), Headphone jack (1, front) |
| Digital Audio Output | Required |
| Headphone Output | Required |

Technical Specification for DATA SERVER (For TIDEL office)**Processor, operating system and memory**

| | |
|--------------------------------------|--|
| Processor type | Intel® Xeon® Processor E5504 |
| Processor speed | 2.00 GHz |
| Number of processors | 1 processor |
| Processor upgrade | Upgradeable to 2 processors (4 or 8 cores) |
| Processor core available | Quad |
| Processor front side bus | 800 MHz Front Side Bus |
| Standard memory | 4 GB (2 x 2 GB) Standard Memory |
| Internal cache | 4 MB (1 x 4 MB) Level 3 cache |
| Memory | DDR3 Registered (RDIMM) |
| Memory slots | 18 DIMM slots |
| Maximum memory | 192 GB (12 x 16 GB) for Registered Memory configurations |
| RACK Mounted External storage Device | 16 TB (SAN) – STORAGE AREA NETWORK with necessary management server. |

Internal drives

| | |
|---------------------|---|
| Internal drives | 320 GB HDD, The System should support to external storage device on live data's during the process. |
| Storage controller | Smart Array P410i/Zero Memory Controller |
| Flexible disk drive | None included standard (not supported) |
| Internal drive bays | 6 x 3.5" (LFF) Hot-Plug SAS/SATA hard drive bays; 2 x 3.5" (LFF) Hot-Plug SAS/SATA hard drive bays |
| Optical drives | Half-Height SATA DVD-ROM Optical Drive. |

System features

| | |
|--------------------|---|
| Form factor | 5U Tower |
| Chipset | Intel® 5520 Chipset |
| Network interface | Embedded NC326i PCI Express Dual Port Gigabit Server Adapter |
| External I/O ports | Serial - 1; Pointing Device (Mouse) - 1; Graphics - 1; Keyboard - 1; Network RJ-45 - 3 (1 dedicated for ProLiant) |

| | |
|-------------------------------|---|
| | Onboard Administrator); USB 2.0 Ports - 6 (2 front, 2 rear, 2 internal) |
| Expansion slots | Six total expansion slots; One PCI-Express x16 Gen2 (x8 speed); One PCI-Express x8 Gen2 (x8 speed); Four PCI-Express x8 Gen2 (x4 speed); Optional PCI-X Expander provides additional two 64-bit/100-MHz PCI-X slots by using a single PCI Express slot |
| Power supply type | Hot-Plug (Redundancy enabled) power supply |
| Power requirements | 100 to 240 VAC, 50 to 60 Hz |
| Compatible operating systems | Microsoft® Windows® Server; Microsoft® Windows® Server Hyper-V; Red Hat Enterprise Linux (RHEL); SUSE Linux Enterprise Server (SLES); NetWare; VMware; HP Citrix Essentials for XenServer |
| Compliance industry standards | ACPI V2.0 Compliant; PCI-Express Gen2; PXE Support; WOL Support; PCI-X 1.0a Compliant; Novell Certified; Microsoft® Logo certifications; USB 2.0; SMBIOS 2.6.1 |
| Security management | Power-on password; Setup password; Serial interface control; Disk configuration lock; Power switch security |
| Serviceability | Tool-free chassis entry and component access; Tool-free motherboard removal |
| Manageability features | Systems Insight Manager; SmartStart; Redundant ROM; System Firmware Update; ROMPaq; ProLiant RBSU (ROM-Based Setup Utility); Automatic Server Recovery-2 (ASR-2); Dynamic Sector Repairing (with Smart Array Controller); Drive Parameter Tracking (with Smart Array Controller); Pre-Failure Warranty (covers processors, memory, and SAS hard drives) |

NOTE:

THE ABOVE SPECIFICATIONS ARE MINIMUM REQUIREMENTS. HOWEVER THE VENDOR SHOULD SUPPLY THE SERVER WITH LATEST PROCESSOR WITH HIGH END TECHNOLOGIES IN CASE OF ANY UPGRADATION IN THE MARKET DURING THE SUPPLY.

Facility Management Software**Appendix 1 – Functional Requirements:****Facility Management Application Functional Requirements:**

The vendor shall supply, implement and maintain a web based Facility Management System for Tidal Park Coimbatore. The proposed system should contain the requirements of Enterprise Asset Management System, Helpdesk, Tenant Management System, Visitor Management System, Facility Booking System and Mail Tracking System. The System should include but not be limited to the following.

ENTERPRISE ASSET MANAGEMENT SYSTEM***Asset Register;***

The System should maintain complete details of each equipment / asset in a plant or facility with the detailed information of Supplier and warranty of each equipment. The system should have Asset template creation for capturing asset type wise special information. The System should follow a good hierarchy to allow for a parent child relation between equipments. There should be no limitation in the no. of equipments. The system should have the provision to move equipment from one parent (site) to another. System should Store Physical characteristics of equipments including height, width, depth and color, Registration and certificate numbers for each equipment. Move equipment from one parent (site) to another. Track movements of equipment. Purchase cost and depreciation calculation and valuation. The System should have provision to monitor maintenance and repair jobs/work orders done against equipment.

Maintenance Policies, Contracts and Work Order Management:

The system should create work orders for the pre-defined policies when they are due and by running the activator, MMS should select the maintenance policies that are overdue or due in near future and turn them into work orders for each equipment. System should have the ad-hoc policies to maintain some standard maintenance tasks which will be done on demand and not on any usage or time frequency. These kinds of policies could be turned into the work order whenever required. System should have policies that could be turned into work orders based on the fixed frequency. System should support hierarchical maintenance policies for a single piece of the asset. Here the policies will be framed in such a way that the policy with higher frequency will cover the jobs of lower frequency policies also. System should also have the policies that could be turned into the work order based on the usage values of the equipment (example: Generator service after running 10000 kilometers). The work order will

be triggered automatically by the system when the policy becomes overdue. System should have Tool for monitoring maintenance and repair job request. Storage of equipment data Scheduling work orders to perform maintenance jobs – routine/preventive maintenance Provide flexible working methods such as managing work through instant work orders, on demand work orders and preventive maintenance work orders. Contracts storage and retrieval with attachments, For Scheduled and Corrective Maintenance Service, Procurement, Projects etc. Vendor Details, Contract Details, Terms of Payment, Contract & Warranty Period, Insurance Details etc. Service Level Agreement (SLA) for the contract can be defined. Auto Reminders for Contract End, Warranty End, to link to one or more facilities, Provision to store Contract Sum and the variations

Maintenance Charges and invoicing multiple clients:

The System should provide Estimated and actual costs for each work order carried out including the estimated and labour cost for the Job and should also have provision to mention what are spare parts used for carrying out the work order. The System should have the capability to link external files like MS Word, MS Excel and other file format to print the work orders.

The system should have provision to approve the work orders. The system should be able to raise the invoice for all work orders. The System should create work orders from customer's job requests. The System should create work orders from Standard Job policies. The System should maintain history of the maintenance work at any time during a job.

Equipment Downtime Analysis:

The System should register downtime of all equipment / plant and also produce Failure analysis codes. The System should instantly produce daily and weekly downtime reports for management use. The System should have the provision to add safety notes and instructions to each work order. The System should provide E-mail escalation on work orders yet to start after due date. The system should be able to carry out budgeting and forecast of all the maintenance activity. The system should have MTBF and MTTR calculation format.

Materials Management:

The system should support multiple maintaining Storerooms / Multiple warehouses. The system should be able to raise Purchase Requisition and should have provision to raise the RFQ's & Quotations. The system should create, Inactivate, or delete inventory stock items. The system should maintain Material Issue and return. Record all the spare parts for maintenance/repair purpose, Charge out spare parts to customers ,Create purchase orders

for store purchase, Manage all suppliers and contracted rates for spares, Analyze the usage of all spare parts. The system should provide Manual Inventory Adjustment. The system should have automatic Reorder Process. The system should have E-mail escalation if the ordered items are not received after raising the Purchase order. The system should provide Quotation Analysis and Order Placement. The system should provide reports on ABC (Always Better Control) Analysis and FSN (Fast, Slow and Non Moving) items.

Resources Management:

The system should have provision to manage technicians both employees and contractors. The system should have Attendance Management of Employees which gives details on how many hours the technicians have worked. The system should have list of craft / trade codes. The system should have a list of codes for various reasons for absences. The system should maintain the list of craft/trade supervisors/foremen. The system should maintain the list of names assigned to crews. The system should have the Proficiency Indexing of Technician

Contract Management:

The system should store contracts details and retrieval with attachments should be possible. The system should store vendor details and retrieval should be possible. The system should have three levels of Auto Reminders for Contract End, Warranty End.

This contract management module should be able to link to one or more facilities. The system should have the provision to store Contract Sum and the variations. The system should be able to define Service Level Agreement (SLA) for any job type and priority combination. SLA Analysis and escalation should be possible in the system. The system should define Escalation time and the person to escalate. The SLA's should be linked to a Contract or a Maintenance Policy (or facility) or a Work Order directly. The system should provide SLA analysis and escalation can be done for internal work orders also. The system should generate alerts on Rate Contracts nearing expiry. The system should have rate schedule capability for customers and supplier. The system should have system Level Budgeting for each Facility

Cost Management

The system should have Cost Head / Sub cost Head Management. The system should have Expenses Management. The system should provide Receivable / Payable information. The system should provide comparison between budgeted, Estimated and actual Expenses. The system should provide Utility Bills.

Handheld Integration

The System must provide the real-time wireless capability (from PDA's) for work order management. This should provide comprehensive features to allow entry and manage work orders, enter labour, coordinate materials, and maintain equipment.

Real-time wireless capability (from PDA's) for inventory control. This should provide comprehensive features to allow physical count of materials (with or without bar-coding), and issuing and receiving materials. Real-time wireless capability (from PDA's) for accessing contract/vendor details. System should have provision to manage the data transfer in perfect way.

Key Management

The system should have a key register facilitating to store the detailed information of all keys used in the premises like what for the keys are, who is the owner of the key, whether the key is master key or duplicate, number of duplicate keys etc. Key register should maintain the keys that are even not in use. Key Register should provide comprehensive features to assist with the automation of all facets of the management of a key control system.

The system should have a provision to track the movement like issue / receipt of the keys along with the date and the persons involving in transaction. System should also have a reports on key movement and lose of keys.

KPI and Dashboard

The system should have the provision to create Custom KPIs and KPI Charts and associate detailed drill-down reports. The system should be able to define the privileges and the Custom KPIs should be linked to menus. The system should have custom built report designer.

System should be able to show the Key Performance report as graphical representation. The Standard KPIs – like Preventive Maintenance Backlog, MTBF (Mean Time between Failures), Overdue PM Work Orders, Maintenance Cost variance etc should be available. The system should have provision to drill-down and view detailed report. The system should have provision to display of the graphical representation like Pie Chart, bar chart or column chart which is auto refreshing to show latest data.

Reports

System should have the extensive filter conditions through which user can filter based on user role wise, department wise, organization wise ,site wise , etc can be generated. Report Designer to create user definable reports.

HELP DESK

Helpdesk module manages the work flow of registering, assigning and resolving of the job requests, problems reported and calls received by the call center by way telephonic calls, emails and alarms from the control systems. Repository of information should enable the helpdesk operators by providing vital information on standard solutions, past solutions history, approved solutions or best practices for faster resolution of calls. Online call booking, emails, tele-calling and control system alarms. The system should Register Problems, Job Requests, Calls, Priority assignment, nature of faults, Assign, distribute, monitor, Escalation based on standard SLA -Triggers the alert mails to the team or its members for assigning, responding and resolving the call. Help Desk system should have user configurable time intervals and frequencies for triggering the mails. Every call is set to the operators' priority when it is registered, Recording of all events throughout the life cycle of a call, Raise, Track and Close Work Orders, Record solutions and post in Repository, Service Level Analysis, Faults and Solutions history, Fully indexed data for fast searching, Simple and advanced search functions, Call response analysis, FAQs and Links , Improves customer satisfaction. Generation of the MIS Reports like Open call, Assigned, in progress, resolved call, closed call, Work Order status, Service Level, Call Category , Call Sub Category, Equipment wise problem resolution history.

TENANT MANAGEMENT SYSTEM

The system should manage Property, Tenant, Owner and Lease information. The system should be able to capture tenant Move-In, Subscription for Services, Move-Out. The system should have provision to enter utilization data. Based on the data, the system should Track & generate Bills periodically. Bill Printing should be possible in the system. The system should maintain Tenant Payments and Credit Notes details. The system should provide occupancy / Vacancy Analysis. The system should provide export of Data to other Financial Applications. Captures the utilization of services/utilities of tenants. Details of the tenants moving into a property unit. Leasing details attached services for the selected property and required services, Property available date for the next tenant, Generation of bills at the time of Move out, Automatic calculation of the balance with the received amount. Hierarchical grid view of the bills. Auto generation of Credit Note balances, Provision to select the tenant zone and write a description. Generation of the MIS Reports and Report Designer

VISITOR MANAGEMENT SYSTEM

The system should have provision to have online requests for appointment. The system should have provision to appointment approval and rejections. The system should be able to Pre-register individuals and group for single or multiple days. The host can record his non – availability schedules date wise with reasons.

The system should generate Email notifications on requests, approvals and rejections. The system should have provision to list current day's appointments and expected visitors. The system should have provision allowing visitor self sign-in and sign-out with the details of items carried with. The system should have provision to Scan Business card, capturing the signature and visitor's photo for speedy registrations. The system should have provision to track the sign out,

The system should have provision to black list any visitor and maintain Visitor history. The system should have screens for visitors to verify their data. The system should track Visitor Movement using Access Control. The system should integrate with MS Exchange for appointments calendar. The system should have provision to print Visitor badge / pass, Contractor Badge Issue, Gate Pass Printing for Items carried-in. Generation of the MIS Reports and Report Designer

FACILITY BOOKING SYSTEM

The system should have Online/Offline booking requests. The system should have intuitive visual booking using the graphical interface. The system should have provision to Confirm, Reject, and suggest of alternate facilities. The system should have provision to Re-allocate or Cancel any facility. The system should generate E-mail / SMS notifications on Requests, Approvals and Cancellation. The system should have provision to Analysis utilization of all facilities. The system should have provision to bill for Reservations & Cancellations. The system should have provision to Invite Internal & External Attendees for meetings. The system should have provision to Scheduling of Refreshments Orders to Catering. The system should Pre-register Attendees with Visitor Management. The system should integrate with Active Directory and MS Outlook for registering meeting appointments. Facilities Directory. Floor Plan Booking is the easy way of booking using the graphical interface. Floor Plan Booking makes the booking very easier just by displaying any required floor plan and selecting the required facility. For a single day booking, accessing the floor plan booking link through quick booking.

Car Packing Space can be booked in prior either through the Application Screen or the Visual Booking Screen. Generation of the MIS Reports and Report Designer

MAIL TRACKING SYSTEM

Mail Tacking System to keep in track of the Outgoing and Incoming Consignments. Reports to keep track of the Incoming/Outgoing consignment and do Performance Analysis based on the Courier Service Provider. Enter / modify / delete all the Consignments received for delivery Provision to generate Barcode for the Consignment No. Printing Consignment No. wise checklist/sender wise consignment No/ Destination wise consignment list (To be delivered through Courier / Postal / hand delivery by person / all) Printing as per the courier / postal / hand irrespective of courier. Triggering a mail to the sender and receiver once the consignment is delivered from the mail room with details. Provision to update the delivery status once the consignment is delivered to the receiver. Triggering mail to the sender on delivery intimation with details. Provision to view the pending consignments to be delivered. SLA based on the type of consignments. Generation of the MIS Reports and Report Designer

Software Specification Requirement

- Should be compatible with the Microsoft Platform
- Should be a 100% web based application
- Should work with RDBMS like Microsoft SQL Server 2008 or Oracle 11i
- Should be able to send Email, SMS and MMS Messages
- Should integrate with Microsoft Exchange Server
- Should be able to use Microsoft Active Directory for Authentication & Security
- The PDA application should work on Microsoft Windows Mobile

SUPPLIERS: MRI /SIERAA

Special condition to the contractors:**Shop Drawings / Co-ordination Drawings**

The Contractor shall arrange for detailed shop drawings / fabrication drawings and material specifications for specialized works including detailed design calculation and submit required copies each of the same for TIDEL/OWNER'S ENGINEER / Architect's prior approval. All shop drawings shall reflect the design intent as provided in the execution drawings and shall not be deviated without prior permission. The shop drawings shall be based on the actual site conditions and shall take into account all coordination as may be required in order to avoid any clash or interference with other service lines or any other building features. The shop drawings shall be fully supported by necessary design calculations wherever applicable or as directed by the Architect to the Contractors. Such design calculations shall be carried out by a competent agency and shall also comply with relevant Indian / International standards as applicable. Wherever so required, the Client reserves the right to demand a certificate as to the correctness of the design to be issued after verification by an independent proof checking agency that the Client may either approve or nominate.

All charges for preparing the shop drawings, coordination drawings, preparation of design, getting the same proof checked including carrying out any other modifications as necessary shall be fully covered in the quoted rates and no extra shall be payable for adherence of the above requirement.

As executed drawing shall be submitted within one month of completion of entire work. Copies of each of such built in drawings shall be submitted to the TIDEL/OWNER'S ENGINEER / Architects. The final version thereof submitted in hard copy format in triplicate as well as electronic format in AutoCAD latest Release as on date (not less than 2007).

SECTION - 8**SPECIFICATION FOR OPERATION & MAINTENANCE CONTRACT****1.0 Annual Comprehensive Maintenance Service Contract for 7 (Seven) Years including DLP.**

- a) The scope of the Comprehensive Maintenance Service Contract entail the successful tenderer to bear the full responsibility for all kinds of maintenance such as short term, long term, routine, emergency maintenance etc. The successful tenderer shall be required to post at site adequate number of personal for full time, round the clock maintenance. Such personal posted at site must have appropriate qualification and experience to ensure trouble free and continuous operation of the entire system. Senior officers from the successful tenderer's organization must monitor the work of the field personal periodically. Detailed documentation must be maintained of all the work undertaken at site. Adequate spares must be maintained at site to ensure that the down time is minimal. Maintenance schedule and routines must be submitted to TIDEL PARK COIMBATORE LIMITED. and any maintenance work must be undertaken after obtaining approval/permission of the owner.
- b) The service contract shall be for full 5 (Four) years after the DLP period of 24 months with effect from the date of handing over of BDVC system after testing, commissioning etc., as covered in the contract.
- c) A lumpsum offer for each year the Service Contract shall be made and the offer shall remain firm till the end of service contract period and no escalation on whatsoever account shall be considered.
- d) Payment shall be considered in 4 (Four) equal installments, one at the end of each year of satisfactory completion, which decision rests with the Employer / Building Management of TIDEL PARK COIMBATORE LIMITED
- e) Any expenditure incurred by the Employer /Building Management of TIDEL Park Coimbatore Ltd. due to defective service rendered under the service contract shall be recovered from the payment of installment(s).
- a) Tenderers are required to furnish full details of service facility available in COIMBATORE. They shall also furnish the maximum time period within which

the service personnel would attend to any complaint by users in the performance of the system offered.

- b) The AMC shall be comprehensive. All spares, consumables, oil, power & water will be provided by successful tenderer. The successful tenderer shall keep the essential spares at TIDEL PARK COIMBATORE LIMITED, Coimbatore building during the Defects Liability Period to avoid the delay in maintenance.

2.0 Operation Contract full 7 (seven) years:-

- a) The operation contract shall be for full 7 (seven) years from the handing over of the BDVC works after testing, commissioning etc., as covered in the contract.
- b) Offer for each year of the Operation Contract of four years shall be made and the offer shall remain firm till the end of service Operation contract period and no escalation on whatsoever account shall be considered.
- c) Any expenditure incurred by the Employer / Building Management of TIDEL Park Coimbatore Ltd. due to defective operation rendered under the operation contract shall be recovered from the payment of installment(s).

SECTION – 9 -LIST OF APPROVED MAKES

| List of equipments | Approved makes | Country of origin |
|--|--|-----------------------------|
| IP PBX, IP PHONE | Cisco / Nortel /Avaya /Siemens. | Japan/Europe/USA |
| CORE AND EDGE SWITCHES | Cisco/ Nortel / Avaya / Juniper / Reggedcom / | Japan/Europe/USA |
| NMS | Cisco/Nortel/Avaya/Juniper | Japan/Europe/USA |
| PATCH PANELS / Fibre cables/LIU | ADC Krone /Nexans / Systimax/AMP | INDIA |
| Telephone Krone boxes, Telephone copper cables | ADC Krone /Nexans /DELTON | INDIA |
| CAT 6 cables / face plates/I-O/ PATCH CORD | ADC Krone /Nexans / Systimax/AMP | INDIA |
| SERVERS AND PC | HP/DELL/IBM | Japan/Europe/USA |
| LCD TV SREEN | SONY/PANASONIC/HITACHI/S | Japan/Europe/USA |
| VIDEO CONFERENCE EQUIPMENTS | POLYCOM / VCON / TANDBERG | UK/ISREAL/ Japan/Europe/USA |
| RACKS | APW PRESIDENT/ VELRACK/HCL | Japan/Europe/USA |
| AUDIO CONFERENCE PHONE | CISCO/ POLYCOM / AVAYA / NORTEL | Japan/Europe/USA |
| PVC PIPES | AVON PLAST / FINOLEX / AKG /AERO PLAST/UNIVERSAL | INDIA |
| PROJECTOR | EPSON / PANASONIC/SONY/ SANYO/CANON | Japan/Europe/USA |
| DVD RECORDER | SONY / PANASONIC / MARANTZ | Japan/Europe/USA |
| TOUCH PANEL | AMX / CRESTRON | Japan/Europe/USA |
| CAMERAS | SONY / PANASONIC | Japan/Europe/USA |
| GI CABLE TRAYS | PROFAB, TECHNOFAB, PEARL ENTERPRICES | INDIA |

SPECIAL NOTE: THE SPECIFICATION INDICATED IN THE TENDER ARE MINIMUM REQUIEMENT. HOWEVER VENDOR CAN SUPPLY HIGHER SPECIFICATION AT THE TIME OF SUPPLY WITH UPGRADED MODELS WITH OUT ANY EXTRA COST.

SECTION - 10

| TIDEL PARK COIMBATORE | | | | |
|---|--|---------------------------|---------------|----------------|
| BACKBONE, DATA VOICE COMMUNICATION SYSTEM AND AUDIO, VIDEO CONFERENCE SYSTEM | | | | |
| S.NO | DRAWING NAME | DRAWING NO. | REF NO | REV NO. |
| 1 | BACK BONE SCHEMATIC LAYOUT | TPCBE-Sch-VIJ-2010-112322 | SDB-SCH-01 | RO |
| 2 | SCHEMATIC DIAGRAM FOR IP PHONE DISTRIBUTION LAYOUT | TPCBE-Sch-VIJ-2010-112324 | SDB-SCH-02 | RO |
| 3 | IBMS CABLE TRAY ROUTING LAYOUT FOR FIRST BASEMENT | TPCBE-Sch-VIJ-2010-112331 | SDB-SCH-03 | RO |
| 4 | IBMS CABLE TRAY ROUTING LAYOUT FOR GROUND FLOOR | TPCBE-Sch-VIJ-2010-112332 | SDB-SCH-04 | RO |
| 5 | IBMS CABLE TRAY ROUTING LAYOUT FIRST FLOOR PLAN | TPCBE-Sch-VIJ-2010-112333 | SDB-SCH-05 | RO |
| 6 | IBMS CABLE TRAY ROUTING LAYOUT FOR TYPICAL FLOOR | TPCBE-Sch-VIJ-2010-112334 | SDB-SCH-06 | RO |
| 7 | SCHEMATIC LAYOUT FOR CLOSED CIRCUIT TELEVISION CABLE DISTRIBUTION SYSTEM | TPCBE-Sch-VIJ-2010-112325 | SDB-SCH-07 | RO |
