OFFICE OF THE DIVISIONAL MANAGER CTU & DIRECTOR TANSPORT, UNION TERRITORY, CHANDIGARH.

e—TENDER NOTICE

E-tenders (Online tenders) are invited for the supply design, development ,implementation ,maintenance of 325 Electronic Ticketing Machines (software for front end and backend, Firmware)for the Automatic Fare collection systems on monthly rent basis in two bid system i.e**. technical bid and financial bid which are to be submitted separately.** The offer shall be valid for three months (90 days) from the date of opening of technical bid. The prospective bidders can also visit office of the CTU during office hours on any working day by contacting General Manager, CTU-I, Plot No. 701, Industrial Area, Phase I, Chandigarh for any kind of information with regard to the job/tender. The detailed terms & conditions of the tender documents may be downloaded from the website of Chandigarh Administration i.e. http://etenders.chd.nic.in.

1. Tenderers are required to quote their rates for 325 ETM machines on monthly basis (as per Financial Bid (BOQ) excluding taxes (complete job i.e. to Supply, Design, Development, Implementation & Maintenance). The taxes shall be as applicable from time to time. It is clarified that actual payment shall be adjusted as per the actual number of buses on pro-rata basis.

2. EMD of Rs. 2,00,000/- (Rupees Two Lakh only) must be submitted in physical form in the shape of Bank Draft drawn on any scheduled bank at Chandigarh **in favour of the Director Transport, Plot No. 701, Industrial Area, Phase-I, Union Territory, Chandigarh** in the office of Divisional Manager, CTU & Director Transport, U.T., Chandigarh, Plot No. 701, Industrial Area, Phase I, Chandigarh on or before **07-07-2020 up to 14.00 hours**. Tenders without submission of Earnest Money Deposit (EMD) through bank draft in physical form within the stipulated date and time shall not be considered and shall be rejected out rightly.

3. The detailed bid documents can be downloaded from the website of Chandigarh i.e. **http://etenders.chd.nic.in/nicgep/app.** Tender documents completed in all respect duly signed must be uploaded on the above said website on or before **07-07-2020 upto 14.00 hours**. The Technical bids will be opened on **07-07-2020 at 15.00 hours.** Financial Bids of only those bidders will be opened who qualify the technical bids and the date for which will be intimated later. No tender shall be accepted in physical form under any circumstances.

4. The pre bid meeting with the prospective bidders will be held on **23-06-2020 at 11.30 A.M.** in the office of Director Transport, Plot No.701, Industrial Area, Phase-I, U.T., Chandigarh.

5. The Divisional Manager, CTU & Director Transport, U.T., Chandigarh shall have every right to (a) cancel / withdraw / amend the advertisement or extend the due

date at his sole discretion or (b) accept or reject any tender/allotment without assigning any reason.

6. The tenderers can approach the Nodal Officer, e-tendering, CTU Chandigarh on any working day between 9.00 a.m. to 5.00 p.m. in case any query/clarification regarding e-tendering process HELPLINE No. 0172-2740641of Department of Information Technology, Chandigarh administration, Sector 9-D, Chandigarh.

-Sd-
Divisional Manager,CTU
& Director Transport,
U.T., Chandigarh.

TERMS AND CONDITIONS FOR SUPPLY ,IMPLEMENTATION,MAINTAINANCE ,OPERATION OF 325 ETM MACHINES ON MONTHLY RENT BASIS,

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1. (i) Tenderers are required to quote their rates for 325 ETM machines for 36 months (as per Financial Bid (BOQ) excluding taxes for Supply, Design, Development, Implementation and Maintenance of Electronic Ticketing Machines (Including front end , backend software for AFCS and Firmware). The taxes shall be as applicable from time to time. It is clarified that actual payment shall be adjusted as per the actual number of functional ETMs on pro-rata basis.

(ii) The prospective bidders shall also quote the rates for three months for Software Engineer for Design, Development of software ,application and MIS reports and also for the integration ,customizing of Software solution with the existing software, application and hardware as per requirement of CTU (Initially for three months).During the contract period the successful bidder has to develop software for AFCS software (ETM Firmware ,Software for backend and front end) and MIS reports as desired by CTU as per the future requirements .The successful bidderwill be responsible to provide technical support for operating system database (AFCS), and application software , any required/desired changes in AFCS software (backend ,front end and firmware) and MIS reports during whole contract period.

2. About the Project

CTU desires to implement the Automatic Fare Collection System (AFCS) in its 213 buses. It shall entail

- GPRS enabled Electronic Ticketing Machines.
- Software for AFCS (Back end ,front end and Firmware)
- MIS reports for intelligent use of ticket data generated.
- Seamless transfer of data in real time to back-end server through GPRS.
- Integration and customization the ETM software, MIS reports with existing setup.

3. Scope of Project:-

CTU has done the computerization to some extent such as daily roster generation, cash collection, boom barriers at ISTB's, e-salary, e-store inventory ,Overtime allowance calculation; however CTU is inclined to hire the services of

Technical Partner for Automatic Fare Collection System .

The successful bidder (technical partnership) shall be responsible for the following:-

- Supply of GPRS enabled 325 Electronic Ticketing Machines (functional) on rent basis along with design, development, implementation, and maintenance of these 325 machines for 36 months.
- Design and Development of Software (along with source code) for Automatic Fare Collection System (Back end, front end and firmware) for 325 ETM machines as per requirement of CTU during the contract period.
- Provide technical support for system database application software and MIS for whole contract period.
- The software for AFCS shall be designed in such a way that it shall easy to install by user/client.
- Development of the MIS reports as and when required by CTU during the whole contract period for intelligent use of ticket data generated.
- Bidder is fully responsible to seamless data transfer in real time to back-end central server through GPRS Communication network also on client end (depot) .In case of Audit of ETM machines at client end/depot, mechanism for transfer of data through BAFO cables (USB) and also by Bluetooth and Wi-Fi.
- Development, Integration and customization of the AFCS software, MIS reports with existing software, applications and Hardware of CTU.
- Developing Dashboards as per requirement of CTU including Graphical presentation .
- A preventive maintenance schedule shall also be maintained for 325 ETM machine and to be shared with CTU from time to time ..
- Bidder will be responsible to provide the GPRS communication for the ETM machine operation on routes..
- Bidder will also be responsible the security for data generated through ETM machine and successful transfer of data to the central server of CTU .
- Bidder will be responsible to host the software application for AFCS , MIS report and to store the data through GPRS on the CTU's central server.
- The System should be robust and stable, and should able to with stand high stress / load / sudden spurts of high traffic etc without any change in the system performance. The bidder should adopt an appropriate architecture, technology etc to ensure the same.
- The application development including OEM software used should be made free from any vulnerability & provide a bug free environment for the entire solution for the period of contract, CTU should be provided with all administration packs, enterprise security tools, security patches, updates, a bug fix, vulnerability fixes etc from the OEM from time to time for the entire period of contract.

- The end to end solution should be supported by the OEM for the products, software, and application etc for the entire period of the contract. All products, software, equipments should be in the name of the CTU. In case of unsatisfactory performance of services of the bidder, CTU would reserve the right to assign the same to any other qualified bidder at no additional cost implications.

4. Eligibility criteria :-

4.1 **Technical Qualification :-** "Experience of minimum 2 Projects for Intra-City/Inter-City operations for Design, Development, Integration, Implementation ,Operation and Maintenance of Automatic Fare Collection System with the use of minimum 200 ETMs or provided the solution for more than 100 buses) in the last five (5) years preceding the year 31-03-2020.The bidder has to attach Purchase order/ Performance certificates and Completion certificate issued by the purchaser along with the numbers of ETMs used in the project. The documents to be uploaded as part of technical bid.

4.2 **Financial Qualification :-** Average annual turnover should be minimum Rs. 30.00 Lakhs in the last two years (copy of Annual returns for financial years 2017-18 and 2018-19 to be attached in this respect) along with audited copy of balance sheets.

5. **Pre-Bid Conference:-**

5.1 A pre–bid conference will be held **23-06-2020 at 11.30 A.M.** at Plot no-701,Industrial area phase-I , Chandigarh. with the prospective bidders, for the purpose of holding technical & financial/ commercial discussions and providing clarifications by the Purchaser. The queries, if any, from the Bidders in respect of RFP document should reach the Purchaser before dated **24-06-2020 up to 10.00 A.M.** In the pre- bid conference, clarifications pertaining to technical, financial commercial and other issues .

5.2 Any verbal suggestion / proposal of variations / deviations / additions in the RFP - document made during the pre -bid conference should also be given in writing to the Purchaser by dated **26-06-2020 up to 16.00** hours to keep the same in record and reference without which Purchaser will not be liable to entertain the same.

5.3 The Purchaser may clarify or even revise on variations/deviations, alternative proposals, which ensure equal or higher quality / performance to the Technical specifications during pre-bid conference. The decision of the Purchaser in this regard shall be final.

5.4 After incorporating the amendments acceptable to the Purchaser, the RFP -

Document shall be frozen by **27-06-2020 at 16.00 hours.** The addendum to the RFP - Document may be downloaded from the website of the CTU/https://etenders.chd.nic.in.

5.5 Non-attendance at the pre-bid conference will not be a cause for disqualification of a bidder. However, the terms and conditions of the addendum(s) will be legally binding on all the bidders irrespective of their attendance at the pre-bid conference.

6. **Compliance with technical specification:**-

6.**1** The ETMs required against this bid shall conform to the Technical Specifications of the Tender/RFP Document attached at annexure -B.

7. Bid Security /EMD:-

i) The prospective bidders shall be submitted Earnest Money Deposit (EMD) amounting to **Rs.2,00,000/- (Rupees: Two lakh Only)** in physical form in a sealed cover in the shape of Bank Draft drawn/FDR/Bank Guarantee on any scheduled Bank at Chandigarh in favour of Divisional Manager CTU & Director Transport UT Chandigarh, Plot No. 701, Industrial Area Phase-I, Chandigarh and scanned copy of the same must submit with the technical bid online.

ii) The EMD of unsuccessful bidder will be returned back immediately after the allotment of the contract. The EMD of the successful bidder will be refunded on receipt of the performance security.

iii) The e-tender must be accompanied with Earnest Money Deposit (EMD) for the amount pertaining to the module and drawn in the name of the Director Transport, U.T., Chandigarh, Plot No. 701, Industrial Area, Phase I, Chandigarh, payable at Chandigarh in the form of Fixed Deposit Receipt or Account Payee Demand Draft or Bank Guarantee from any of the scheduled bank in an acceptable form, which should be valid for 90 days beyond the technical bid opening date.

iv) In case of successful bidders backs out, his/her earnest money shall be forfeited along with interest thereupon and the bidder will be black listed for any future contract as per Chandigarh Administration Finance Department Notification No. 1927-F&PO(3)-2009/1170, dated 27.02.2009.

v) Earnest money/performance security and/or any other sum of the tenderer(s) lying with the Director Transport, U.T., Chandigarh, Plot No. 701, Industrial Area, Phase I,, Chandigarh in connection with any other tender/case shall not be considered/ adjusted against this tender

vi) No tenderer is exempted from furnishing the Earnest Money Deposit (EMD) under any circumstances.

8. Price Basis:-

8.1 Financial bid/proposal should be as per the format BoQ.

8.2 The Bidders should quote their lowest possible prices (excluding taxes). The price quoted shall be firm and not subject to any upward variation except for the variation in statutory levies & duties.

9. Bid validity:-

9.1 The offer of tender will be valid for a period of 90 days from the date of opening of tender (technical bid). Withdrawal of offer of finalized firm during this period will result into forfeiture of earnest money.

9.2 In exceptional circumstances prior to expiry of the original bid validity period, the Purchaser may request the Bidder for extension in the period of validity. A Bidder may refuse the request without becoming liable for forfeiture of EMD. However this bid may be rejected by the Purchaser on such refusal. Moreover, the bidder agreeing to the request will not be permitted to modify his Bid.

10. Bidding criteria :-

10.1 Bidders shall have to submit technical and financial bid online only.

10.2 Technical bid shall consist of the Performa of submission of Bid with EMD, Performance Statement, technical details and all other documents as well as the technical and commercial information required in accordance with the RFP document.

10.3 Financial Bid will be opened, of the technically qualified bidders only.

10.4 Financial Bid form shall be infloated only as per BOQ (excluding all taxes) and not in physical .

This shall be on basis of monthly cost to CTU for 325 ETM machines in INR. This amount for the whole project term (three years) .The same shall be quoted as per the format given for financial proposal .

11. Bid Opening :- The Technical Bids of all the Bidders will be opened/downloaded by the Purchaser at time, date and place indicated in the Bid Documents. In the event of the specified date of bid opening being declared holiday for the Purchaser, the bids shall be opened at the same time and location on the next working day.

12. Evaluation and Comparison of Bids:-

12.1 The evaluation will be made at all inclusive total price of a bid.

12.2 The Purchaser will evaluate and compare only those Bids determined to be responsive to the requirements of the Bid Document.

12.3 The Bidders are required to provide all technical details, as these are required for evaluation purpose as per this RFP documents. Bids received without full & complete specification are liable to be rejected. The Purchaser shall go through and evaluate the Technical bids and advise accordingly only those Bidders whose bids shall be found responsive to the requirements of the Bid Document, Financial Bids of only such Bidders will be opened at the time & date to be notified later to individual successful Bidders (successful in technical bid). The price/financial bids of other Bidders, who do not qualify as a result of Technical evaluation, shall not be opened.

12.4 The Purchaser shall evaluate and compare the price/financial bids of only those Bidders who have offered the prices complete in all respect as per the RFP document.

13.0 **Performance security:-**

1. The successful bidder will have to deposit performance security @ 10% of the total cost of the Project in the form of Fixed Deposited Receipt (FDR) or a Bank Guarantee from a commercial bank in favour of “Director Transport U.T., Chandigarh” which should be valid for a period of 39 months from the date of supply order and will have to be deposited within 15 days from the date of issue of the Letter of Acceptance/Supply Order. In case the contract period is extended further, the successful bidder shall deposit the increased correspondingly performance security accordingly.

2. In case of delay in performance security up to 30 days from prescribed time limit penalty as per penalty clause shall be imposed . In case of further delay CTU will be at liberty to forfeit EMD so deposit.

3. In case of violation of any of terms and conditions as mentioned in the tender documents, the performance security of the bidder(s) shall be forfeited in full along with interest thereupon and the bidder will also be black listed for any future contract as per Chandigarh Administration Finance Department Notification

No. 1927-F&PO(3)-2009/1170, dated 27.02.2009 by the Director Transport, U.T., Plot No. 701, Industrial Area, Phase 1, Chandigarh.

14. **Allotment of award:-** The contract will be awarded t the bidder in whose total bid price will be lowest as per financial bid/BoQ (exluding taxes/GST) ,provided bidder fulfils all the other terms and conditions of the tender documents.

15. **Payment Terms:-**

15.1 No Upfront charges will be paid to the Vendor.

15.2 Payment will be paid to the vendor on quarterly basis on submission of bill only after start of the term of the project (i.e. after 3 (three) months from the award of Project) depending on number of ETMs Machines.

15.3 Development charges will be paid after successful designing, development Software for AFCS (Backend, Front end software ,ETM firmware) , MIS reports in desired format, Development Dashboards, customization and integration of the AFCS system with the existing software ,application, MIS reports and Hardware of CTU after formal acceptance and take-over of project.

16. **Penalty:-** After start of project term the penalties for poor performance of the ETM/ system shall be imposable (Maximum cap for penalty is 5% of the monthly payment) as per the details given below:

i) **ETM Machine Availability:-** During the contract period successful bidder shall ensure the availability of 325 functional ETM machines daily and failing which penalty @ 3,000/- per day and per machine will be imposed.

ii) ETM operation MIS:- a) Service for the availability of daily MIS reports for the data generated through ETM machines shall be 100% and failing which penalty of Rs 2,000/- per day will be imposed.

b) No ETM machine shall be hanged on route failing which penalty @ 1,000/- per machine per day will be imposed.

iii) ETM ticket data transmitted over GPRS:- Non Transmission of Data would attract a penalty per day as per the following: –

a) Service for tickets financial data of each ETM machine shall be 100% pushed to central server directly through GPRS system. If the system fails to push the data even after one hour from data generated by particular ETM failing which penalty @ 5,000/-per machine and per day will be imposed.

b) The data for such ETM machines will be downloaded manually in the depot but the penalty mentioned at sr. no –a will remain same.

iv) If AFCS do not work continuously for 2 days due to any technical failure on the part of the vendor, CTU will have the right to initiate the proceeding for cure period or the cancellation of the project and forfeit the security amount. The proceeding of black listing will also be initiated.

v) The bidder shall resolve every complaint for corrections/updations etc. related to the AFCS (software front end-backend, firmware, application operation) within 3 hours for minor and within 8 hours for major category failing which the penalty Rs 5,000/- per day will be imposed per day.

vi) In case of non-supply of the ETM/material or materials received with other than desired specifications/ Sub standard materials, the Director Transport, CTU reserves the right to levy penalty as may be decided by the Director Transport, Chandigarh Transport Undertaking, Chandigarh.

17. Functional Requirements for ETM Machines :- The functional requirements shown in Annexure-A are tentative, indicative and shall be finalized after the completion of the requirement gathering by the SI for the project.

18. ETM Specifications:- **Shown in Annexure –B.**

19. MIS reporting system:- The MIS reports shown in **Annexure-C** are tentative, indicative and shall be finalized after the completion of the requirement gathering by the SI for the project.

20. **Software ownership Rights :-** The Bidder shall relinquish to CTU the source code along with adequate detailed documents (from the testing phase onwards) and the rights to the systems, programs and software developed, all ownership right to the application software packages procured for CTU. The source code with version control system should be submitted in a DVD to CTU.

21. Training :- The successful bidder will Impart training as many as desired by the CTU operate/manage the AFCS software (Firmware, front end and backend) and applications to the CTU employees without any additional cost.

22. TIME PERIOD FOR THE COMPLETION OF WORK:-

The work for the 325 ETM machines for Supply, Design, Development, Implementation and Maintenance of Electronic Ticketing Machines (Including front end , backend software for AFCS and Firmware) should be start immediatley after allotment of Letter of Award (LOA) and completed within one month from the date of the Letter of Award (LOA) /work order .The agreement between successful bidder and CTU will be signed with 15 days.

23. **REMOVAL OF AND CHANGE OF DEFECTIVE ETM MACHINES**

1. For any Deficiency noted by the Department, the successful bidder shall initiate immediate remedial actions for the same as advised by the Department.

24. **DEPARTMENT RIGHT ACCEPT ANY BID AND REJECT ANY OR ALL BIDS**

The Department reserves the right to accept or reject any Bid/tender/allotment of contract and to annul the Bid Process and reject all Bids/tender/allotment of contract without assigning any reason.

25. **GENERAL TERMS AND CONDITIONS**

1. If the information provided by the bidders is found to be incorrect/misleading at any stage /time during the Tendering Process.
2. Bids without signature of duly authorized person(s) on all pages of bid documents.
3. Bids without seal of company on whose behalf the signatures have been appended on all pages of the bid document.
4. Bids without power of authorization and any other document consisting of adequate proof of the ability of the signatory to bind the Bidder.
5. The rates quoted should be F.O.R. destination (excluding all taxes) i.e. CTU, Main Store, Workshop Depot No.1, Industrial Area, Phase I, Chandigarh or the place specified by the office.
6. Standard quality material of specifications as mentioned in the tender documents/ RFP will only be accepted as approved by the Inspection Committee of the Department as constituted for the purpose.
7. ETM/Materials with different specifications will not be accepted. Materials received with other than desired specifications/ Sub standard materials will be returned at bidder's risk and cost or it may be kept in CTU store at bidder's risk and bidder will have to make replacement of these items within fifteen days from the date of inspection by committee failing which, the recovery equivalent to the amount of sub standard materials/other specifications materials will be made from the payment of bills.

8. All the documents/GRs must be sent direct to this office.
9. The requirements of ETMs are based on anticipated consumption and therefore quantity can be increased or decreased as per the actual requirement from time to time.
10. The department reserves the right to accept or reject/return the material (in part or all) as supplied by the firm against the purchase order as per actual requirement from time to time as the case may be.
11. The successful bidder is liable to supply,design, development , implementation ,maintenance of 325 Electronic Ticketing Machines along with software for front end and backend for the Automatic Fare collection systems on monthly rent basis and integrate the system complete in all respect within stipulated period as mentioned in the tender documents.
12. CTU has given basic requirement of ETM machines, software ,application .The vendor has to ensure fulfillment of these requirement basically . However, due to change in Govt./CTU policy or due to unavoidable circumstances , the vendor has to modify the software /MIS/Application /ETM machines etc. as per business needs during the contractual period without any additional financial burden to CTU.
13. The bidder shall relinquish to CTU the source code along with adequate detailed documents and the rights to the systems, programs and software developed all ownership right to the application software package procured for CTU. The source code with version control system should be submitted in a DVD to CTU.
14. The successful bidder shall provide web based application software and its database in SQL along with source code to the CTU immediately after integration of the electronic ticketing machines software and database with existing system functional in CTU. The required license for SQL will be provided by CTU.
15. The successful bidder will ensure the security of the data /information of the complete AFCS system.
16. The successful bidder will give training to operate the ETM/ system to the CTU employees without any additional cost.

17. In case of violation of any terms and conditions of the contract by the successful bidder or the successful bidder backs out, the Earnest Deposit/Performance Security shall be forfeited and the bidder shall be black listed for any future contract as per Chandigarh Administration, Finance Department Notification No.1927-F&PO (3)- 2009 dated 27.02.2009.
18. Any conditional, telegraphic tenders, fax tenders, tender without earnest money deposit, tender not on the prescribed form or any deviation from the terms and conditions of the tender notice shall not be entertained and rejected out rightly.
19. This tender form is not transferable.
20. The tenderer(s) should furnish the copy of PAN Card and GST registration certificate with the technical bid.
21. The tenderer(s) must submit the scanned copy of the affidavit/ undertaking with the technical bid online for non blacklisting of their firm/ company. Moreover the affidavit/ undertaking in original should be deposited in a sealed envelope to the office of Director Transport U.T. Chandigarh on or before closing the date of tender.
22. In case of violation of any of terms and conditions as mentioned above, performance security of the tenderer(s) shall be forfeited in full along with interest thereupon and the bidder will be black listed for any future contract as per Chandigarh Administration Finance Department Notification No. 1927-F&PO(3)-2009/1170, dated 27.02.2009 by the Director Transport, U.T., Plot No. 701, Industrial Area, Phase 1, Chandigarh.
23. Any conditional terms and conditions mentioned by the firm in their covering letter or in the tender documents will not be considered at any circumstances.
24. The Technical Bid containing EMD and signed terms and conditions shall be opened as specified in the presence of the tenderers who may wish to attend in the office room of the Divisional Manager, CTU & Director Transport, U.T., Chandigarh (Computer Section).
25. The tenders received after the stipulated date and time shall not be entertained/opened.
26. The tenders can approach the Nodal Officer, e-tendering, CTU, Chandigarh

on any working day between 9.00 am to 5.00 pm in case any query/clarification regarding e-tendering process (Phone No. 0172-2679003 extension 216) or HELPLINE No.0172-2740641 of Department of Information Technology, Chandigarh Administration, Sector 9-D, Chandigarh.

26. **SETTLEMENT OF DISPUTE AND ARBITRATION**

26.1 Amicable Resolution

(a) Save where expressly stated otherwise in this Contract, any dispute, difference or controversy of whatever nature howsoever arising under, out of or in relation to this Contract between the Parties and so notified in writing by either Party to the other (the "Dispute") in the first instance shall be attempted to be resolved amicably by the Parties and failing such the same shall be resolved in accordance with the procedure set forth in **sub-clause (b)** below.

(b) Either Party may require the Dispute to be referred to Transport Secretary, Union Territory, Chandigarh for amicable settlement. Upon such reference, both the Parties and the Transport Secretary or his nominee (who can be an employee of Chandigarh UT dealing with the Contract or otherwise) shall meet at the earliest mutual convenient and in any event within 15 (fifteen) days of such meeting, either Party may refer the Dispute to arbitration in accordance with the provisions given below.

26.2 Arbitration-

(a) Any Dispute which is not resolved amicably, as provided, shall be finally settled by binding arbitration under the Arbitration and Conciliation Act, 1996. The arbitration shall be by a committee of 3 (three) arbitrators chosen from a panel of arbitrators on the list of arbitrators available with or furnished by Union Territory, Chandigarh, 1 (One) arbitrator is to be chosen by each Party and the third, who shall be the Chairman will be the Transport Secretary, Chandigarh Administration, Chandigarh. If either Party fails to choose its arbitrator, the other Party shall take steps in accordance with Arbitration and Conciliation Act, 1996.

(b) Place of Arbitration

The place of arbitration shall be Chandigarh only.

(c) Language

The request for arbitration, the answer to the request, the terms of reference, any written submissions, any orders and rulings shall be in English and, if oral hearings take place, English shall be the language to be used in the hearings.

(c) Procedure

The procedure to be followed in the arbitration by the Arbitral Tribunal shall be in accordance with the Arbitration & Conciliation Act, 1996 and as may be decided by the Arbitral Tribunal.

(d) Enforcement of Award

Any decision or award resulting from arbitration shall be final and binding upon the Parties. The parties hereto hereby waive, to the extent permitted by Law, any rights to appeal or to review of such award by any Court or Tribunal. The Parties here to agree that the arbitral award may be enforced against the Parties to the arbitration proceedings or their assets wherever they may be found and that a judgment upon the arbitral award may be entered in any Court having jurisdiction thereof.

(e) Fees and Expenses

The fees and expenses of the arbitrators and all other expenses of the arbitration shall be initially borne and paid by respective parties equally subject to determination by the arbitrators. The arbitrators may provide in the arbitral award for the reimbursement to the prevailing party of its costs and expenses in bringing or defending the arbitration claim, including legal fees and expenses incurred by the said party.

(f) Performance during Arbitration

Pending the submission of and/ or decision on a dispute difference or claim or until the arbitral award is published the parties shall continue to perform all of their obligations under this Contract without prejudice to a final adjustment in accordance with such award.

27. JURISDICTION

Any dispute or difference or claim etc, shall be subject to the exclusive jurisdiction of the courts situated at Chandigarh only. No other court shall have the jurisdiction to

entertain or try any matter concerning this tender.

UNDERTAKING BY THE BIDDER ON THE STAMP PAPERS OF RS.15/-.

1. I, Shri_____S/o Shri _____ working as_____of the firm namely M/s._____are duly authorized to apply for this Tender.

2. I, the undersigned, have read and understood the above detailed terms and conditions (Clause 1 to 20) as well as Tender Notice and undertake to abide by them.

3. I under that the I/my firm/company has not been blacklisted by the Department of Govt. of India or any State Govt. or any Union Territory or any Public undertaking.

Signature of the Tenderer

Name of the Tenderer_____

Address_____

Tel No._____

ANNEXURE –A

TENATATIVE FUNCTIONAL REQUIREMENTS:-

Sr. No	Requirements
1	These units shall be hand held devices which will be used on Buses by Bus crew and can also be used Advance bookers.
2	The unit shall be designed and configured to cater to all types of operations including Interstate, intercity and special category buses operating on flat fare structure, etc.
3	Provision shall be available to download & store minimum 100 Route details each consisting of 100 stages with alphanumeric name description and rate.
4	ETM shall be capable of handling multiple routes as per duty planned for the day
5	ETM shall be able to print the ticket as per the specified format. Every ticket shall have a unique ticket number generated. The ticket number shall be with the combination of ETM code, Bus Number, Date & the serial Number. Tickets issued by the ETM(S) shall have a legible print by use of an adequate font size in order to read easily.
6	ETM shall be able to generate ticket with the minimum key strokes for easy & effective operations.
7	ETMs shall be able to issue a group ticket i.e. it shall be able to accept the number of persons, number of full ticket, number of half tickets in a group and compute the fare accordingly and issue a single ticket.
8	ETMs shall be able to issue the luggage tickets and child tickets or concessional tickets/passes like senior citizen, war widow freedom fighter etc. Following information shall be captured while issuing these types of tickets:- Type of ticket (Luggage, child tickets, concessional tickets etc), Route Number, service number , Source/origin, Destination, Time stamp & date, ETM Unit Code, Bus ID (in case of bus change ETM shall be enable to update the new buses no in ETM machine and ticket as well data in ETM machines shall be generated with new bus number), Fare,
9	The conductor shall be able to record the following information:- Type of Ticket, Category ID (In case of child Ticket), Destination (In case of child Ticket), Fare.
10	ETMs shall have a facility to print the repeat tickets with press of only one button on the key pad. That is for the cases where two separate passengers' source & destination are same. Such repeat ticket generated shall have a unique ticket number . In no case ticket number shall be same.
11	Business rules for fare stages, fare structures, various routes, etc shall

	be configurable. ETMs shall have facility to compute the fare as per the fare stages defined by department. Fare table shall be prepared through fully automated fare calculation So this automated system shall be provided in the AFCS software . In case of any change in fare table, routes ,bus no or other changes in firmware shall be updated through GPRS systems in the ETM machines.
12	At the end of every trip, ETMs shall be able to print the trip report, trip summary report and log sheet of all transactions.
13	ETM should be capable to ensure that all the ticketing data is encrypted and pushed to the central server with 0 data loss. There should be no need to manually download data at the bus depots (except emergency) . On reaching in depot ETM /Box branch will reconcile/match the cash collected by the conductor in ETM machines and data received in server/client and after matching conductor will deposit the cash collected from route.
14	ETMs shall provide facility to enter the ticket Inspector employee ID and generate inspection report with Date & Time stamp, place of checking (lat/log). ETM must be enable to enter Fraud cases. ten times or any other fine/penalty tickets by the inspectors.
15	ETMs shall have an access control mechanism build in to facilitate authentication and authorization.
16	ETM should be able to authenticate the RFID based Smart Card Passes, QR codes.
16.1	Ticket Classification (i.e. indicate that this is ETM ticket).
16.2	Category ID (i.e. Student pass ,senior citizen etc.)
16.3	Destination
16.4	If free traveler then following information will be captured
16.4.1	Ticket Classification (i.e. indicate that this is a free traveler ticket) with record the identity of the traveler with some unique ticket number or some other way.
16.4.2	Free traveler category ID (i.e. Police or Other) .
16.4.3	Destination, actual journey fare , concessioned fare ,date and time
16.4.4	The conductor shall record the above information with minimum key strokes.
16.4.5	The ETM should be able to print a 0 value ticket against the pass or concessional tickets like police, employee etc.
17	Provision to record in the ETM, the ticket number of the tickets sold from the ticket counters/ adda booking at the bus station with the use of minimum keystrokes to record the ticket number.
18	Provision to record the details of ticket sold through OBRS system.
19	All the ETMs shall be docked at respective depots at the end of the day. The ETMs shall be fed with unique code, to identify that the tickets are issued from valid ETMs and thus controls the misuse of the ETMs. This

	number will be randomly generated unique number and entered every day at depots before issuing the ETMs to conductors. All ETMs shall also have an asset id / code on their body for identity. As the Buses will be returned to the depot after the end of the shift. The night shift buses will return to depot next day after completing the trip. Further Power Supply along with furniture/wooden boxes with respect to charging of ETMs will be provided by CTU (except chargers).
20	Data exchange facility shall also be provided between ETM to PC / Desktop through USB or Bluetooth or WiFi.
21	The list of minimum inputs attributes to be captured through these ETMs are
22	Category of Buses
22.1	Source, Destination, stages/stops falling between the origin to destination
22.2	No of people for Group ticket, No of Full tickets & No of Half tickets in a group.
22.3	Full ticket, Half Ticket
22.4	Number of Day passes sold.
22.5	Child ticket
22.6	Date & Time stamp
22.7	Fare
22.8	Fare stages
22.9	Route structures (route number, service number, service time)
22.10	Bus Number
22.11	Trip Code and trip number,
22.12	Conductor Name / ID, Driver Name / ID
22.13	Ticket Inspector ID and Date/Time/place stamp of checking
22.14	Luggage charges
22.15	Minor Repairs & maintenance during the trip
22.16	Terminal fee/parking fee , Toll taxes
23	ETMs shall be designed keeping in view the mobility, usability and robust operations. LCD display should give clear view in night and day. ETMs shall be water proof, dust proof, heat resistant and shock proof. Proper casing with a strap, for ETMs shall be provided.
24	ETM interface shall be design in such a way that In case of remote areas where no network is available the data shall be stored in the ETM machine and once network becomes available, the same shall be sent to the central server immediately.
25	The ETM shall support secure transfer of data (financial) from ETM through GPRS/GSM (4G/5G) network to a central server .
26	Fare and other real time information related to the complete Automatic fare collection system (software/application, operation of ETM) should be updated Over the Air (OTA).
27	Capability of transfer advance bookers data via cable or WiFi into conductor's ETM .

28	Integration with the Online Reservation Booking Management System.
29	ETM should have the capability of booking ticket through online and assign seat number to the passenger. (ETM should be integrated with the ORS on real time basis to support data consistency.)
30	If required, developments of the new interface for data flow between the ETM and ORS.
31	The interface should be capable of performing the functions like uploading and downloading of data, like capture advance booking details from the ORS and pass it on to the ETMs which will help conductor to know advance booking details, Route Details, Current tickets issued details and the seat vacancy position in buses.
32	The system should then allow auto compilation of tickets and its details, revenue reconciliation, daily income reports, online MIS and decision support system as per requirements of CTU.
33	Any changes/updation done related to fare tables ,route and operation shall be updated online (over the air) within very less time consumption .
34	MIS report access time or display time shall be very low .
35	The AFCS system should be to perform without any degradation of performance .
36	The system should have an accuracy of 100% for every transaction ,reports generated , MIS and data transfer (generated through ETM) to the central Server.
37	Security of ETM software is critical and crucial because system involves financial implication and should be protected from unauthorized users.
38	The data captured in the ETIM should be most secured in all respect and should not be accessible to any unauthorized user.
39	The Successful bidder needs to specify the system of transferring the data from breakdown ETIM to new ETIM given to conductor in case of en-route failure of ETIM or PC/Thin client.
40	Ensure seamless data transfer from ETM machines to central server and client end.

ANNEXURE –B

ETM MACHINES SPECIFICATION .

Sr . No	Parameters	Specifications
1	**Processor**	Dual SAM ETM based on Processor: - minimum 350 MHz speed Arm 7/9/11 Or Qualcomm Quad –core ARM processor. Or Android based Or better
2	**Operating System**	Linux or window or Android 4.4 or Higher In case, any specific software/application is required to programme /configure/manage the devices, the same will be provides free-of-cost.
3	**RAM**	128 MB or Higher
4	**FLASH Memory**	256 MB or higher
5	**Extendable Memory**	SD/Micro SD card interface (Minimum 4 GB)
6	**Display**	a)Graphic TFT COLOUR display with minimum 128 X 64 pixels. b) Capable for displaying graphical images/icons. c) Display unit should have good readability even during night with proper backlight. d) Display unit should be dust-proof. e) Display panel should be scratch resistant.
7	**Printer**	a) Paper Width 57 mm b) Paper roll cage of minimum 25 mm to 40 mm. c) Printer shall support Thermal paper of 50-60 GSM. d) 384 DOT per line. e) Ultra fast 2 inch thermal printer with minimum 60 mm/sec speed. f) Easy paper roll loading mechanism, without using paperfeed-key. g) Transparent paper cover. h) PAPER OVER sensor. i) PAPER COVER OPEN Sensor j) Capability to print QR code. h) Capability to print ticket in English
8	**Tickets**	Minimum 3000 tickets per day.
9	**SAM Slots**	Minimum of 2 SAM Slots compliant to ISO Standards 7816. b) Cryptographic methods for card data security. c) Triple DES for key Management with UKPT (Unique Key per Transaction). d) Should support encryption standard including 3DES and AES for smart card reading. e) Validate EPurse Smart Cards to connect with other modes
10	**Real Time Cloak**	Inbuilt Real Time Cloak with battery backup.
11	**GPRS Communication**	a) Wireless Wide Area. GSM/GPRS on 850/900/1800/1900 MHz.; b) GPRS modem to suit Indian Frequency band/Bluetooth c) RS232C Serial Port for PC connectivity an 115K baud rate d) USB Port: Type A/Type

		e) In built tamper proof SIM Card Holder f) GSM signal strength indication in display unit. g) Should support SMS, Data, GPRS, TCP/IP
12	**Battery**	a) minimum 2000 mAH Li-ion/Li-polymer internal battery with protection against explosion while handling.. b) Quick rechargeable in-built battery charger with overcharge/ over-voltage/ overcurrent protection capable to charge fully within 3 hours c) CHARGING and BATTERY FULL indications display in machine. d) Minimum of 300 full recharge LIFE-CYCLE for BATTERY. e) Capable of operating minimum 1000 ticket printing and minimum 14 hours at least 8 hours in operation mode, or 72 hours of sleep/power save mode, per single charge with real time data transfer and smart card read & write facility.
13	**Contactless Smart Card Reader/Writer**	EMV certified ETM compatible with i. Contactless Smart Card Reader/Writer ii. NCMC compatible**.**
14	**Indications on display**	Battery charge status, GSM Signal strength
15	**Others** Remote Administration	Over the air upgrade of firmware, application, configuration parameters, master data, etc. should be possible.
16	**Accessories**	a) Each ETM must be provided with carry bag. b) AC Charger(working from 160 V to 250 V, 50 Hz) c) BAFO cables sets for manual transfer of data from ETM to PC (RJ -11+BAFO Cables 60 nos. d) AC charger (working from 100 V to 240 V
17	**ETM Software Development Kit (SDK)**	The Vendor shall provide Software Development Kit (SDK) for the ETM firmware so that ETM features can be developed by the SI in future as required.
		The SDK shall provide functions / Programs / APIs to support at least the following:
		a) Smart Cards functions
		b) Communication Device (RS232, USB, GPRS modem, Wi-Fi etc) functions
		c) Inter-process communication (IPC) functions
		d) Multitasking functions
		e) Multithreading functions
		f) Power (Battery) Management functions
		g) Internal Printer Management functions
		h) File System Management functions
		i) Clock/ Timer Management functions
		j) Beeper/ LEDs/ Buzzer Management functions
		k) Environment Variables related functions
		l) User Interface (UI) Management Related functions
18	**Warranty**	For the complete contract period
19	**Design**	a) easy holding b) Should be tamper proof design for fraud prevention c) Should be a rugged and compact design, water and dust resistance.
20	**OEM**	The successful bidder will provide ETM machines of single OEM (manufacturer) during the whole contract period.

21	**Certification**	The successful bidder will have to provide the certification from the government approved agency complying technical specifications before supply of ETM machines to CTU.

ANNEXURE –C

TENATATIVE MIS REPORTS :-

Sr. No	Requirement
A	**Reports from ETM Device**
1	Status Report at particular stage indicating trip, service type, stage, date & time of inspection, no. of passengers, no. of tickets sold, revenue collected by conductor as per ETM, cash with conductor , no. of penalty tickets issued etc.
2	Ticket Detail Report for all tickets (trip wise) or for selected trip, route, conductor, bus and depot.
3	Trip wise/Ticket Type wise Revenue Collected through ETM.
4	Day wise Revenue Collected through ETM.
5	Stage wise Report of boarded / alighted passengers (Trip wise) and time wise (peak or lean)
6	Toll Tax Payment Report (Trip wise)
7	Expenses Report
8	Enforcement /inspection Report
9	Trip-wise Receipt, Luggage receipts, toll tax receipts, Total no. of passengers (Adult & Child), Total no. of concession passengers, Total Earnings & EPKM (Trip-wise and Duty-wise).
10	Concession Report – Trip-wise/ Concession-wise revenue collected through various concessions, fare collected, & no. of passengers traveled on concession fare with the details of actual fare & concessional fare.
11	Trip wise, State wise, Denomination wise breakup of revenue collection in case of interstate route.
B	**Reports from Backend Software**
1	Conductor Sign On/ Sign Off Details as on required date & time with summary containing conductors not reported back as per schedule duty, imprest amount tally report.
2	Machine Detail Report indicating No. of Online ETM, No. of ETM in depot & unmoved / idle ETM in depot on a particular date & time.
3	Conductor-wise & Rupee Denomination-wise revenue Report
4	Shift-wise/ Cashier/route/depot/bus wise.
5	Daily Cash Collection Report for Parent Depot, Other depot, and for Interstate Route (Conductor wise and Traffic Controller wise)
6	Conductor-wise Shortage / Excess Report
7	Expenses Report
8	Toll Tax Payment Report

9	Revenue deposited by conductor
10	Night out Deposit Receipt Report
11	revenue & No. of passengers (State-wise)
12	Smart Card and QR code revenue & No. of passengers etc.
13	Different dashboard.
13 i	KMPL reports:- routes/buses/date wise
13 ii	Crew change earning reports for crew duty performed for other depot (conductor-wise).
13 ii	a) Trip-wise Passenger Revenue, Luggage Revenue, Toll Tax Revenue with EPKM, LF & No. of passengers for the selected trip or for all trips. b) Revenue with EPKM, No. of passengers for the selected trip or for all trips.
13 iv	Analysis statement for the selected trip or for all trips
14	Stage/state/trip-wise direct passengers traveled report for the selected trip or for all trips
15	Service type-wise revenue/earning report for the selected trip or for all trips.
16	trip-wise earning report for the selected trip or for all trips
17	Conductor-wise earning report for selected conductor or for all conductors (conductor performance and conductor consolidate report).
18	Analysis statement for the selected trip or for all trips
19	Cancellation trip/ KM report
20	Monthly/Quarterly/Yearly/For specified period
21	Conductor-wise Shortage / Excess cash Report
22	No. of Passengers traveled
23	Date wise Revenue Collection Report/trip wise revenue collection
24	Driver performance and driver consolidate Report .
25	Concession Report indicating concession wise fare collected and amount of reimbursement.
26	State wise Breakup of Interstate Earning
27	Date wise Inspector and Inspection Report
28	Date wise Toll Tax Report
29	a. revenue & No. of passengers (State-wise)
29 -i	b. Senior Citizen revenue & No. of passenger
29- ii	c. Concession wise revenue & No. of passengers
29 -iii	d. Annual/monthly Smart Card and QR code revenue & No. of passengers etc.
29-iv	Trip-wise Passenger Revenue, Luggage Revenue, Toll Tax
29 -v	Trip-wise, stage-wise passengers traveled and revenue report for the selected trip or for all trips
29 -vi	Detailed analysis statement for the selected trip or for all trips
29 -vii	Exception Reports
29- viii	Low paying trip report for the given period

29 -ix	High paying trip report for the given period
29 -x	State Master
29 -xi	Depot Master
29- xii	State master
29- xiii	Passenger Master
29- xiv	Machine Master
29-xv	Employee Master
29-xvi	Stop Master
29-xvii	Crew Duty Master
29-xviii	Trip Code Master
29-xix	Bus Service Type Master
29-xx	Concession Master
29-xxi	Parameter Master (Shift duty timing, service type wise sanctioned KM, Start ticket No., imprest cash, age for child, time setting, Avg. Seating capacity etc.)
29-xxii	Route Master
29-xxiii	Fare Master for CTU, fully automated fare calculation system
29-xxiv	Route Details (route no, service number, service time, service type)
29-xxv	Trip Details
29 -xxvi	Crew Duty Details
29-xxvii	User authorization
29-xxviii	Change of password
29-xxix	Reports required at the GM office and Head Office Level
29-xxx	Depot-wise, trip-wise earnings with EPKM, LF, No. of passengers (Daily/Monthly)
29-xxxi	Depot-wise and detailed analysis report
30	Route-wise earning report (Monthly/ Yearly)
30 i	Depot-wise, conductor-wise earnings
30 ii	Slab-wise trip detail report Up and down.
30 iii	Depot-wise concession
30 iv	Route statement (Route-wise/Clockwise Trips with Summary)
30 v	Concession-wise revenue report
30 vi	Depot-wise/Concession-wise Revenue Report
30 vii	Periodic reports on lost / damaged / late received / defective ETMs
31	Conductor waybill abstract.
32	Daily cash collection with passenger tax
33	Route performance (service number and service type wise and route consolidate reports
34	Returned waybill detail.
35	Tax calculation
36	Issued ETM, ETM history, Conductor ETM history details
37	Consolidate passenger travelled
38	Daily Cash Collection Statement with passenger tax

39	Daily route receipt
40	Multiple ETM machines issuance to conductors
41	Revenue deposited by the conductor
C	**Other Reports**
1	Average peak and lean demand in passenger load during various times of a typical day (non-seasonal) and Special day seasonal)..
2	% of bus occupancy ,fleet utilization in route wise, time wise (peak or lean)
3	Peak and lean revenue collections during various times of a typical day (non-seasonal).
4	Peak and lean revenue collections during various times of a special day (Seasonal).
5	Average peak and lean time from start to destination of a route during various times of the day.
6	Peak and lean bus-stop utilization rate – no. of passengers boarding at different bus stops enroute. Route wise, stage wise ,state wise time wise (peak and lean)
7	Different Dashboard
8	KMPL report-route wise, bus wise and date wise
9	Buses operated per day, average buses operated per day, Kms operated per day, average Kms operated per day, load factor (%) average load factor (%),passenger kms per day (route wise/day wise) ,average passengers kms per day ,passenger count per route/bus/per day , average passenger count per route/bus/per day and frequency wise occupancy /fleet utilization.
10	Denomination wise ticket issued on route, bus, state wise report.
11	Different comparison reports between previous periods to the present periods.