



Bangalore Metro Rail Corporation Limited

(A JV of Govt. of India and Govt. of Karnataka)

3rd floor, BMTC Complex, K H Road, Bangalore-560027 (India)

Phone – 080-22969300, 301 - Fax: 080-22969222, E-mail: bmrcl@dataone.in

Tender for supply of Contactless Smart Cards

(Bid no. 3 AFC-CSC dated 11-03-2011)

Notice Inviting Tender

Bangalore Metro Rail Corporation Limited (BMRCL) invites sealed bids from established and reliable manufacturers for the supply as set forth in Section IV, "Scope of Works". meeting the Eligibility Criteria as stated in the detailed Bid Document to bid for supply of 300,000 Contactless Smart Cards, with option to increase the quantity by 50 %.

Eligibility criteria are detailed in para 2 of section III- Instructions to Bidders. Please refer to Key Details below for all important information related to purchase, clarification and submission of Bid document. Please refer to all the important information mentioned in Section III & IV of tender document, extract of which is given below.

The bid document can be purchased by payment of prescribed fee (as given in 'Key Details) by Demand Draft or pay order, in favour of Bangalore Metro Rail Corporation Limited, payable at Bangalore.

If in an event any of the day specified in the Key Details, happens to be a holiday for BMRCL, the next working day shall be key date. Please note carefully the requirements for submitting bids and the date and time for submittal. The bids must be received in the office of BMRCL not later than the specified date and time. Bids received after the due date and time or those which are incomplete are liable to be rejected.

Further, corrigendum/ addendum, if any, issued to the Bid document, shall also be published on the website and also intimated to those who have purchased the bid document. It is the bidder's responsibility to submit the completed bid document taking into account all addenda/corrigenda issued. Bids which are incomplete will be rejected.

BMRCL reserves the right to accept or reject any or all bids received at its absolute discretion without assigning any reason whatsoever.

Managing Director
BMRCL, Bangalore

KEY DETAILS

1.	Tender Notification	BMRCL/01/AFC/2011/CSC dated 11-03-2011
2.	Cost of Bid/Tender document	Prescribed Non-refundable fee in the form of crossed demand draft or pay order from a Scheduled Commercial Bank in India in favour of Bangalore Metro Rail Corporation Limited, payable at Bangalore for an amount of ₹ 5,000/-
3.	Dates for Purchase of Bid document	On all working days between 11.00 hrs and 17.00 hrs (IST) from 12-03-2011 to 26-03-2011
4.	Address for purchase of Bid document	The Managing Director, Bangalore Metro Rail Corporation Limited, 3 rd Floor, BMTC Complex, K H Road, Shanthinagar, Bangalore-560027
5.	Bid Security Amount (refundable)	₹ 4,00,000/-
6.	Last date for submission of queries/clarifications to bid document	01-04-2011
7.	Last date and time for submission of Bids	Upto 15-04-2011, 1500 hrs. IST
8.	Date and time of opening of Bids	15-04-2011, 1530 hrs. IST
9.	Contact Persons	Brajendra Kumar, Dy.CE (Telecom & AFC) 080-22969336, brajendra@bmrc.co.in A.S. Shankar, Chief Engineer (S&T) 080-22969234, shankar@bmrc.co.in

**Extract of Tender document
(Section III & IV)**

SECTION III

INSTRUCTIONS TO BIDDERS

1.0 General

1.1. Bangalore Metro Rail Corporation Limited

Bangalore Metro Rail Corporation Ltd (BMRCL) is the Special Purpose Vehicle of Government of India and Government of Karnataka, implementing the Phase I of the Bangalore Metro Rail Project which is a Mass Rapid Transit System (MRTS).

The Bangalore Metro weaves through the bustling commercial and residential areas of the city. The first phase of Bangalore Metro consists of both North-South Line and East-West Line. The North-South Line is approximately 24.2 km long, and stretches from Nagasandra in the North to Puttenahalli in the South. The East-West line is approximately 18.1 km long, and covers from Baiyappanahalli Station in the East to Mysore Road Station in the West. Out of the 42.3 km, 6.76 km will be underground while the rest will be elevated.

BMRCL proposes to start operation of the first stage of Metro Rail from Baiyappanahalli to Mahatma Gandhi Road (Reach-1) in the first half of 2011. Thereafter other reaches will be commissioned progressively. The AFC system of BMRCL is designed to work with MIFARE DESFire EV1 chip based Smart Cards when Reach-1 is commissioned. BMRCL proposes to procure additional quantity of similar type of Smart Cards that are compatible and interfaced to its network.

This Bid is for supply of above type of CSC. Under this bid 300,000 (Three hundred thousand) number of CSC will be procured.

2.0 Eligibility Criteria to bid

- 2.1 Bidder should have ISO-9001 certified facility for smart card manufacturing & in-house MIFARE DESFire 4K Inlay Manufacturing.
- 2.2 Bidder should have manufacturing Experience of at least 2 years for MIFARE DESFire 4K smart cards (Chip No NXP MF3ICD40 or compatible) and having successfully completed a minimum manufacturing and supply of 200,000 smart cards/PreLams using MIFARE DESFire or compatible, using in house manufactured Inlays for AFC/Transport applications in the last 2 years. The period shall be reckoned from the date of opening of Tender.
- 2.3 The Manufacturer must have had an Indian office for minimum last 3 years. This is required so as to support card printing & customization needs of BMRCL during the card supply phase and post issuance support.
- 2.4 The manufacturer shall provide at least 2 letters of satisfactory performance of its supplies of MIFARE DESFire 4K or its higher version for minimum 2 years each having the following details.

- a. Name and Organization to whom supplied
- b. Customer contact Name, email and Phone Number
- c. Scope undertaken by bidder
- d. Total Quantity supplied.
- e. ISO Standard for cards
- f. Financial criteria
- g. In satisfactory operational use, minimum for last 2 years, (with name of Project)

Note : Bidder should have documentary evidence of compliance to all the point 1 to 4 qualifying criteria above.

2.5 Bidder should have a declaration that vendor has not been blacklisted / debarred by any Government agency.

2.6 Bidder have to submit a declaration that the product being offered does not in any way infringe on international copy right regulations.

3.0 Bid Document

3.1 The Bid Document consists of the following:

Section I NOTICE INVITING TENDER & KEY DETAILS

Section II DEFINITIONS & ABBREVIATIONS

Section III INSTRUCTIONS TO BIDDERS

Section IV SCOPE OF WORK

Section V GENERAL TERMS AND CONDITIONS

Section VI BID FORMS AND ANNEXURES

3.2. The Bidder is required to examine carefully all the contents of the Bid Document including instructions, conditions, forms, terms, specifications including addenda/corrigenda, if any, and take them fully into account before submitting the Bid. Failure to comply with the requirement(s) of Bid Document will be at the Bidder's own risk & responsibility.

3.3 Bidders may purchase the Bid document from BMRCL as detailed in 'Key details' (Section-I). After examining the Bid document in detail, the bidders may seek clarifications from BMRCL. The date and time up to which clarifications can be sought are also mentioned in the 'Key details' for information of the bidders. Request for Clarifications will be entertained from only those prospective bidders, who have purchased the bid documents.

3.4 The supply of material should be in accordance with the stipulations in Section IV "Scope of Work".

4.0 Queries to Bid Document and Amendment to Bid Document

- 4.1 Bidders are requested to send their queries regarding 'Bid documents' if any, in writing by post, courier, in person or fax, latest by the date and to the address as specified in the Key details.
- 4.2 BMRCL will send replies to clarifications in terms of Para 4.6 of this section to all the bidders who satisfy the criteria of para 3.3 above. Prior to due date of submission of Bids and subject to Clause 4.6 hereof, BMRCL may, for any reason, whether at its own initiative or in response to a clarification or query raised by a prospective Bidder, modify the Bid Document by issuing amendment(s) thereto.
- 4.3 The amendment(s), in the form of an addendum(s), if any, will be posted on BMRCL website. It will also be sent to all prospective Bidders who have purchased documents from BMRCL, by speed post and e-mail. BMRCL will not be responsible for delay in postal delivery / non-delivery etc. of any such addendum (addenda).
- 4.4 BMRCL, in its sole discretion, may extend the deadline for submission and opening of Bids.
- 4.5 If any amendment is effected in the Bid Document, only the amended Bid Document shall be final and determinative. The bids which do not comply with the amendment shall be summarily rejected.
- 4.6 Nothing in this section shall be taken to mean or read as compelling or requiring by BMRCL to respond to any questions or to provide any clarifications to a query. BMRCL reserves the right to not to respond to the questions it perceives as non relevant which may be raised by the bidder or not to provide clarifications if BMRCL in its sole discretion considers that no reply is necessary. No extensions of deadline for submission of bids will be granted on the basis or grounds that BMRCL has not responded to any questions or not provided any clarification to a query.
- 4.7 BMRCL may at its discretion hold a pre-bid meeting to address the queries pertaining to tender document. In such case the date and venue of this meeting will be notified on BMRCL website. Failure of bidder to attend such meeting will not be a reason for disqualification of the bidder for submission of bids.

5.0 Documents / Items Comprising the Bid

- 5.1 The Technical Bid shall consist of:
- (a) The following documents sealed in **Envelope A-1** (as set out in Clause 11):
 - (i) Bid Security / EMD (as per Annexure 4 in case of Bank guarantee);
 - (b) The following documents sealed in **Envelope A-2** (as set out in Clause 11):
 - (i) Technical Bid proforma in the form as prescribed in Annexure 1-A;
 - (ii) Partnership registration deed in case bidder is partnership firm, Memorandum of Association in case of Companies.
 - (iii) Documents in support of Eligibility Criteria to bid vide para no. 2 above

- (iv) Valid ARSENAL Certificate of MIFARE DESFire EV1 4k or compatible smart cards to ensure the quality, reliability and compatibility of the MIFARE DESFire EV1 4k based smart cards. The certified smart cards must be manufactured using in-house manufactured Inlays with the MIFARE DESFire EV1 4k of compatible. The detailed test report should also be submitted to prove the details of chip and inlays used in the certified cards.
- (v) Copy of Bid document along with clarifications and addenda issued, if any, **duly signed on each page**; The Annexure 1B to be left blank, mentioning therein that the bidder has filled up the financial bid (Annexure 1B) separately and enclosed in envelope 'B'.
- (vi) Bidder should have to submit ten numbers of Cards along with Tender for Testing. Each card should have engraved serial number and manufacturer name.
- (vii) Power of Attorney for submission of Bid.
- (viii) Any further documents which are requested by the BMRCL before submission of the Bid.

5.2 **Envelope B-** shall consist only of the Financial Bid in the form as prescribed in Annexure 1-B.

5.3 Failure to provide the documents prescribed herein above may result in rejection of Bid.

6.0 Bid Security / Earnest Money Deposit

6.1 Bid submitted in response to the Bid Document shall be accompanied by a bid security (hereinafter referred to as "Bid Security" or "Earnest Money Deposit" or "EMD") of value as specified in key details of NIT **in any of the following form:**

- a. Pay Order or Demand draft in favour of Bangalore Metro Rail Corporation Ltd payable at Bangalore **OR**
- b. Bank Guarantee as per Annexure 4.

6.2 Any Bid not accompanied with valid Bid Security/ EMD in acceptable form will be liable to be treated as being non-responsive and rejected.

6.3 If the validity of Bid is extended, the Bidder shall get the terms of the Bank Guarantee extended by such period as specified in clause 9.0 of this section and shall furnish the same to BMRCL not later than 15 days from the date of the notice of the extension of validity of the Bid.

6.4 No interest will be payable on the Bid Security/EMD.

6.5 The Bid Security is liable to be forfeited, if the Bidder withdraws or amends or impairs or derogates from the Bid in any respect within the period of validity of its Bid or any extension thereof. The decision of BMRCL in this respect shall be final and binding.

7.0 Discharge of Bid Security of unsuccessful Bidder(s)

7.1 The Bid Security of unsuccessful Bidders will be discharged / returned after signing of the contract with the successful bidder.

8.0 Discharge of Bid Security of Successful Bidder

8.1 The Bid Security of the Successful Bidder(s) shall be discharged only after the successful bidder(s) furnishes the Performance Securities as required and signing of Contract Agreement.

8.2 If the Successful Bidder fails to furnish the Performance Security as per Annexure 5, as specified in the 'General Terms and Conditions', then the Bid Security shall be liable to be forfeited by BMRCL, in addition to any other actions as per terms and conditions stipulated in the Bid Document.

9.0 Bid Validity

9.1 The Bid shall remain valid and open for acceptance for a period of 180 days from the last date for submission of the Bid ("Bid Validity").

9.2 In exceptional circumstances, prior to expiry of the original Bid Validity period, BMRCL may request the Bidder for extension in the period of validity for a specified additional period. A Bidder may refuse the request without becoming liable for forfeiture of Bid Security. However, a Bidder agreeing to the request of extension in the Bid Validity period will be required, in accordance with Clause 6.3 hereof, to extend the validity of its Bid Security suitably. Moreover, the Bidder agreeing to the request will not be permitted to modify its Bid.

10.0 Format and Signing of Bid

10.1 The Bidder shall prepare and submit Technical Bid as per the format in Annexure-1A and the Financial Bid as per the format in Annexure-1-B.

10.2 The Bid shall be prepared and shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the Contract. The 'Letter of Authorization' shall be authenticated by written 'Power-of-Attorney' accompanying the Bid. The person or persons so authorized for signing the Bid shall initial all pages of the Bid including supporting documents and printed literature. Each page of the Bid must be numbered. The Power of Attorney, duly stamped and signed by the attorney holder and shall be in the format as provided in Annexure 6 hereof.

10.3 The Bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder. Any interlineations, erasures or overwriting shall be valid only if the person or persons signing the Bid have authenticated the same with their respective signature alongside such interlineations, erasures or overwriting.

10.4 All prices and other information having a bearing on the price shall be written both in figures and words in the prescribed Bid form. In case of a discrepancy, the price given in words shall govern.

11.0 Sealing and Marking of Bids

11.1 The Bidders shall prepare and submit their proposals in 'original' and a 'copy' superscripting on the envelopes whether it is 'Original' or 'Copy' as per the procedure detailed below:

- (a) The Bid Security of the required value, in accordance with the prescribed format, shall be sealed separately in an envelope on which the following shall be super scribed:

“Envelope — A1 : Bid Security for Supply of Contactless Smart Cards.

- (b) The original technical bid documents shall be sealed separately in an envelope on which the following shall be super scribed:

“Envelope — A2 : Technical Bid for Supply of Contactless Smart Cards.

- (c) Envelope — A1 and Envelope — A2 will be sealed in an outer envelope (“Envelope — A”) which shall also contain the copy of original Bid document duly signed by the Bidder on each page. The following shall be super scribed on the outer Envelope A:

“Envelope — A: Technical bid Envelope for Supply of Contactless Smart Cards .

Note : Envelopes at (a) (b) & (c) to be opened on the designated date and time.

- (d) The Financial Bid shall be sealed separately in an envelope on which the following shall be super scribed:

“Envelope — B: Financial Bid for Supply of Contactless Smart Cards

- (e) Both the Envelope — A and Envelope — B shall be sealed in an outer envelope. The outer most envelope shall be addressed and marked as below:
“Bid for Supply of Contactless Smart Cards ” to be opened at the designated date & time.
- (f) The outer as well as inner envelopes shall indicate the name and address of the Bidder to enable the Bid to be returned unopened in case it has to be returned to the Bidder, as per the provisions set forth in the Bid Document.
- (g) The procedure for opening of bids shall be as per para 16.0.

11.2 If the envelopes are not sealed and marked as above, BMRCL will assume no responsibility for the misplacement or premature opening of the Bid and loss of confidentiality.

11.3 Bid shall be in accordance with the provisions contained in the Bid Document. Any material deviations / variations in any Bid, from the terms and conditions of the Bid Document, will render such Bid non-responsive and the same shall be liable for rejection.

12.0 Deadline for Submission of Bid

12.1 Bids complete in all respects must be received at the address given in the 'Key Details', not later than the time and date indicated therein. BMRCL may, at its discretion, extend this deadline for the submission of Bids by amending the Bid Document and in that case all rights and obligations of BMRCL and the Bidders previously subject to the original deadline shall thereafter be subject to the deadline as extended.

- 12.2 Bid(s) may be submitted in person or sent through 'Post' or 'Courier Service'. BMRCL/ shall not be responsible for and shall not take any cognizance of postal or courier delay.
- 12.3 Bids sent through fax / e-mail or through other means of transmission which cannot be delivered in a sealed Envelope shall be rejected.

13.0 Late / Delayed Bid

- 13.1 Any Bid received after the deadline for submission of Bids will be liable to be rejected and returned unopened to the Bidder. No further correspondence on this subject shall be entertained by BMRCL.

14.0 Modification and Withdrawal of Bid

- 14.1 The Bidder may modify or withdraw its Bid after submission but before the date and time fixed for submission of the Bids, provided that the modification or withdrawal, in writing, is received prior to the deadline prescribed for submission of Bids so as to be opened along with the original Bids.
- 14.2 The Bidder's written modification or withdrawal duly sealed & marked should be delivered in accordance with the provisions of the Bid Document stipulated for bid submissions. The Envelope should be superscripted 'Amendment / Withdrawal of Bid', giving the Bid date, Name of Work, Deadline for Submission of Bids and Date & Time of Opening.

15.0 Cost of Bidding

- 15.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid and BMRCL, will in no case be held responsible or be liable for these costs, regardless of the conduct or outcome of the bidding process.

16.0 Bid Opening

- 16.1 The bids, including modification, substitution and withdrawal, will be opened at the time, date and place as specified in 'Key Details' in Section 1 of Bid document in the presence of Bidder's designated representatives who choose to attend. The bidder's designated representatives who are present to witness the Bid opening shall sign a register evidencing their attendance as a witness to the Bids opening process. In the event of the specified date of Bid opening being declared a holiday for BMRCL, the Bids shall be opened at the appointed time and location on the next working day.
- 16.2 Envelope marked "WITHDRAWAL" shall be opened first and the name of bidder shall be read out. The bid for which an acceptable notice of withdrawal has been submitted pursuant to sub-paragraph 14.1 and 14.2 shall not be opened.
- 16.3 Subsequently, envelopes containing the Bid Security (Envelope-A1) shall be opened and Technical bid (Envelope A-2) of the Bidder including "MODIFICATION" if any, will be opened only when these are accompanied with valid Bid security. The Bidder's name, the presence (or absence) of the Bid Security in acceptable form, and any other detail which is considered appropriate, will be announced and recorded by the bid opening authority of BMRCL at the time of bid opening. The bids which are not accompanied by a valid Bid Security, or are accompanied by an unacceptable or fraudulent Bid Security shall be

considered as non-compliant and rejected. Technical and Financial bids of such bidders will not be opened at all.

- 16.4 The sealed Financial (Envelope – B) bids of all Bidders, in unopened condition and as such marked on the same, shall be kept separately with BMRCL for safe custody. The Financial Bids of only the Bidders whose Technical Bids are found responsive and acceptable as per the evaluation criteria specified in this Bid shall be opened. Unacceptable and unresponsive bids will be rejected and the corresponding Financial bids will be returned unopened. The time, date and place of opening of such Financial Bids will be advised later so that the bidder or their representative can be present at the stipulated time of opening of Financial bid.
- 16.5 All decisions whether a bid is non- responsive, unacceptable or whether a Bid Security is fraudulent or unacceptable or non- compliant, will be that of BMRCL.

17.0 Process to be Confidential

- 17.1 After the opening of Bids, information relating to the examination, clarifications, evaluation and comparison of Bids and recommendations concerning the award of Contract shall be confidential and shall not be disclosed to other persons not officially concerned with such process. Disclosure to any such persons shall be made in confidence and shall extend only so far as it may be deemed necessary for the purposes of such performance.

18.0 Clarification of Bids

- 18.1 To assist in the examination, evaluation and comparison of Bids, BMRCL may, if necessary, ask Bidders for clarification of their Bids. The request for clarification and the response shall be in writing only and no change in the price or substance of the Bid shall be sought, offered or permitted.
- 18.2 Further, information regarding Bidder's capacity, capability, if required by BMRCL, shall be promptly furnished by the bidder and he would offer access to the facilities to representative of BMRCL for assessing capacity, capability by actual visit to his works/office.

19.0 Determination of Responsiveness

- 19.1 BMRCL will determine whether each Bid is responsive to the requirements of the Bid Document.
- 19.2 Only those Bids determined to be responsive to the requirements of the Bid Document shall be evaluated.
- 19.2.1 The bidder must bid for all the conditions of Bid, partial or conditional bidding would disqualify the bidders.

20.0 Criteria for Evaluation of Technical Bids

- 20.1 The evaluation of Technical Bids of the Bidders will be made on the following parameters:
- 20.1.1 Submission of required documents as specified in this section, Clause 5, 'Documents / Items comprising the Bid' and the information submitted in Annexure – 1A.

- 20.1.2 Completeness and validity of documents submitted.
- 20.1.3 Fulfillment of eligibility criteria for participating in the bid as specified in Clause 2 of Instruction to bidders.
- 20.1.4 Any of the field with response as 'No' in annexure 1A, will render the Technical bid as non-responsive. Such non-response bids may be rejected by BMRCL.
- 20.1.5 Evaluation criteria not mentioned herein but mentioned specifically in the technical specifications will be taken into consideration in the evaluation of offers.

21.0 Criteria for Evaluation of Financial Bids

- 21.1 The Financial Bids of only those Bidders, who clear Technical evaluation stage will be evaluated.
- 21.2 The bids received will be evaluated by the Employer to ascertain the lowest acceptable tender in the interest of the Employer, as specified in the specification and tender documents.
- 21.3 Tenderer shall quote his base price exclusive of Excise duty, if manufactured indigenously. Excise duty rate applicable and the extent of excise duty levy shall be quoted separately. Other Central and State taxes and levies need not be included for the base price. However, the Tenderer shall also give breakdown of his Price clearly stating the Excise Duty along with all other applicable rate of taxes, levies and duties in the form given as ANNEXURE 1-B
- 21.4 There is 'NO' waiver and or exemption from the Governments for Custom Duty, Excise Duty, Taxes, Royalties. Duties, Cess, Entry Tax and levies payable to various authorities. However, the tenderer may examine whether excise duty exemption is available under "Deemed Export" status for this infrastructure project. In respect of Custom Duty, concessional Custom Duty is available vide Notification No.7/2007-Customs dated 22.1.2007 read with Notification No.42/96-Customs dated 23.7.1996 for Bangalore Metro Rail Project. On the request of the successful bidder, BMRCL will obtain the recommendation of the Ministry of Urban Development to enable the Successful bidder to avail the concessional Customs Duty.

22.0 Award Criteria

- 22.1 The evaluation of Financial Bids of the Bidders will be made as follows:
 - The total price, inclusive of all duties and taxes, quoted by the bidders in Annexure – 1B for the supply of CSCs at Bangalore will be tabulated against each bidder.
- 22.2 The Bidder whose Bid is responsive, complete and in accordance with the Bid Document and has been determined to be the most advantageous (lowest) offer to BMRCL as in clause 22.1 above will be adjudged as successful Bidder.
- 22.3 Correction of Errors: Where there is a discrepancy between the rates quoted in Annexure 1 B in figures and in words, the rates in words shall prevail for determining the tender value as stated in Clause 22.1.

23.0 Payment Terms and Schedule of Payment:

23.1 The prices quoted shall be firm and not subject to any variation except as provided in clause 27.0 of Section V (General Terms and conditions).

23.2 Materials shall be supplied in part installments within the respective delivery periods (modified if any) covered in the contract. BMRCL shall make payment only in INR for such part installment after receipt and acceptance of stores subject to the submission of following.

- Invoice in duplicate, indicating complete break-up of taxes and duties.
- Inspection certificate
- Factory acceptance test report
- Packing list

24.0 Right to Accept Any Bid and To Reject Any or All Bids

24.1 Notwithstanding anything contained in the Bid Document, BMRCL reserves the right to accept or reject any Bid in its sole discretion or to reject all Bids and annul the bidding process without assigning any reason whatsoever at its sole discretion at any time before issuance of a Letter of Acceptance without incurring any liability.

25.0 Notification of Award

25.1 Prior to the expiry of the period of validity of the Bid, the Successful Bidder shall be notified through a **Letter of Acceptance** sent through fax to be confirmed in writing by Registered/Speed Post/ By hand that its Bid has been accepted.

26.0 Signing and Acceptance of Letter of Acceptance

26.1 Upon receipt of the 'Letter of Acceptance' (LoA), the Successful Bidder shall return one copy of the Letter of Acceptance duly signed and stamped by its authorised signatory within 7 (seven) days from the date of issue of Letter of Acceptance.

26.2 Subsequent to acknowledgement of 'Letter of Acceptance' by the Successful Bidder, an agreement ("BMRCL contract") would be executed between the Successful Bidder and BMRCL upon submission of Performance Guarantee by the bidder. The framework of the Contract would be as set out in this Bid.

26.3 The Bidder should give a confirmation from the Chip OEM that latter shall supply the requisite chips for this project to the bidder and in line with the Time Schedule of supply laid down in the tender. The chip OEM may have to enter into a tripartite agreement with the successful bidder and BMRCL with regard to chip OEM's commitment for supply and support during the life period of the chips being supplied for the CSCs.

26.4 In case the Successful Bidder fails or refuses to enter into the Contract within the time limit specified in the Letter of Acceptance or any extension thereof as may be decided by BMRCL, the Bid Security shall be forfeited.

27.0 Performance Security

27.1 Prior to the signing of the Contract, the Successful Bidder shall furnish Performance Security in accordance with the provisions contained in General Terms and Conditions.

28.0 Corrupt Practices

- 28.1 Bidders are expected not to indulge in any corrupt and fraudulent practice. They are expected to observe the highest standard of ethics during the procurement and execution of the Contracts. In pursuance of this policy, following definitions are relevant:
- (i) "Corrupt Practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in execution of the Contracts; and
 - (ii) "Fraudulent Practice" means misrepresentation of facts in order to influence a procurement process or the execution of the Contracts to the detriment of BMRCL, and includes collusive practice among Bidders (prior to or after Bid submission) designed to establish Bid prices at artificial non-competitive levels and to deprive BMRCL of the benefits of free and open competition.
- 28.2 If it is found that Bidder(s) had engaged in corrupt/ fraudulent practice in securing and executing the Contracts, BMRCL reserves the right:
- (a) not to award Contracts to such Bidder,
 - (b) to cancel the Contracts, if already awarded. In case of cancellation, BMRCL shall be entitled to recover from the Bidder the amount of any loss arising from such cancellation in accordance with the provisions of the Bid Document. BMRCL shall also have the right to forfeit the Bid Security/Performance Security of such Bidder, and
 - (c) to ban the business dealing with the Bidder who engaged in such practices either indefinitely or for a specified period of time.

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SECTION IV

Scope of Work

Chapter - 1

Introduction

1.1 General

- 1.1.1 BMRCL is implementing Automatic fare collection (AFC) system using Contactless Smart card as multi-ride ticket and contactless smart tokens as single journey ticket for all stations of Phase I.
- 1.1.2 The same smart cards will be used for other multiple applications such as Bus, Parking, Toll etc. in future.
- 1.1.3 CSCs will be issued from the metro stations through Ticket Office Machines.
- 1.1.4 At the time of entry and exit, the card is presented by the passenger at reader/writer of the Automatic Gate. The card is processed as per Business Rules defined by BMRCL in the Application software of the equipments.
- 1.1.5 The purpose of this specification is to specify contactless smart card with antenna and chip inside required for BMRCL for sale as multi-ride ticket at stations.
- 1.1.6 The card will be a contactless smart card compliant to Type A MIFARE DESFire EV1 (4Kbytes) functional specifications.

1.2 Scope of contract

- 1.2.1 The scope of this contract covers manufacture, supply and acceptance testing of Contactless Smart Cards for BMRCL. It also includes both side 4-colour printed artwork (Artwork to be provided by BMRCL).
- 1.2.2 BOQ and Schedule of supply is at Appendix '1' under this section IV - Scope of Work.

1.3 Certification & Standards

- 1.3.1 The card should incorporate NXP MIFARE DESFire EV1 Chip no. MF3 IC D41 (4 Kbytes)
- 1.3.2 The supplier to produce recognized certifications (for item 'a' below) and to confirm through tests or produce recognized laboratory certificates (for items 'b' & 'c'), that the supplied card (MIFARE DESFire EV1) meets following international standards:
 - a. Electrical specifications should comply with Arsenal Certification from MIFARE Arsenal Institute. Arsenal Certification to be submitted for DESFire EV1, along with the bid.
 - b. Dimensional Specifications to comply with ISO 14443-1.
 - c. Mechanical / environmental tests complying to ISO IEC 10373 as detailed in the acceptance tests.
- 1.3.3 The supplier shall provide a list of references of similar type of MIFARE DESFire card deliveries done by him and their respective applications.

1.4 Warranty

- 1.4.1 Warranty for a period of three years from the date of supply of last batch (as per Appendix 1 of section IV) or 100,000 times of writing whichever is earlier. This warranty shall also cover earlier batches supplied.
- 1.4.2 An initial batch of 200 cards shall undergo acceptance tests during first article inspection and operational tests for a period of one month. Manufacturing for subsequent batches will be started only after successful passing of these tests.
- 1.4.3 Any manufacturing related malfunctioning of the cards (including chip inside) at any subsequent stage may result in cancellation of pending supply order at any stage of delivery without prejudice to any other punitive action.

Chapter - 2

Technical Specifications

Item	Description
2.1 <u>Physical characteristics</u>	
(a) Card geometry	Shape and Physical dimensions (including thickness) to be compliant to ISO 14443-1 standard.
(b) Base material	The complete base material including card body and transparent outer layer should be high grade PET-G. The surface must be such that it is low sensitive to dust and moisture adherence.
(c) Card lifetime	Must be: > 5 years. Therefore during this lifetime, the card must not develop cracks, hole, printing fading, major surface imperfection etc due to aging.
(d) General characteristics	Card must adhere to specifications covered in ISO IEC 10373-1-General characteristics (for following parameters): <ul style="list-style-type: none">▪ Resistance to dynamic bending stress▪ Torsion stress▪ Bending stiffness▪ Resistance to break▪ Flammability, Peel strength▪ Card warpage▪ Resistance to chemicals▪ Adhesion▪ Card stability etc.
2.2 <u>Electrical characteristics</u>	
(a) Distance of work	Card should work at a distance at least 5 cm between antenna and card.
(b) Certification	Supplier to submit Arsenal certificate (specifically for MIFARE DESFire EV1 based cards). The submitted Arsenal certification shall include certification for essential electrical parameters, protocols and characteristics of Type A MIFARE DESFire EV1 contactless

<p>(c) Inlay</p> <p>(d) Card Antenna</p>	<p>card chip.</p> <p>Such parameters (but not limited to) include:</p> <ul style="list-style-type: none"> ▪ Antenna coil size, Card chip / antenna inlay design ▪ Communication frequency, Operating field strength, Modulation ▪ User available application memory (4Kbytes) ▪ Read/write time, Read/write endurance (100,000 cycles), Data retention (> 10 years), Data transfer rate ▪ Security features such as Anti-tearing, Momentary power loss protection, Anti-collision, Data integrity (support mutual authentication with the reader), 3DES encryption, EEPROM failure automatic detection, Transaction atomicity. <p>The CSC should comply to all standards / specifications covered under ISO 14443 Type A standard for contactless smart cards.</p> <p>The Inlay should be manufactured by the Tenderer himself. The Construction of the Card Antenna should be made of copper-wire and should be embedded type only for long durability and better readability. The Tenderer should specify the technology used for embedding.</p>
<p>2.3 <u>Security features</u></p>	
<p>(a) Transportation keys</p>	<p>Card manufacturer will encode cards with transportation keys prior to delivery to ensure security/integrity of the chip.</p>
<p>(b) Unique serial number</p>	<ul style="list-style-type: none"> ▪ Card shall be issued with a Unique ID (serial number). ▪ Unique engraved ID will be embossed on the card Surface (laser engraved). Unique serial no. with padding digits for supplier identification to be used (to be consulted with BMRCL). ▪ Engraved ID and corresponding Unique ID information for complete delivery should be available in recorded electronic media (CD etc) which will be securely delivered to BMRCL.

(c) Card tamper protection	Card opening must not be possible without breaking the card itself and card must become useless. If card is opened, it should become unusable.
2.4 <u>Environmental conditions parameters</u>	
Physical card and embedded data should not be tampered in adverse utilization conditions.	
(a) Resistance to environment	Cards must resist up to environment stresses as: Temperature: +50°C Relative Humidity: 100 %
(b) Storage condition	Temperature: -10 to + 60°C Relative Humidity: 15 to 100 %
(c) Operating condition	Temperature: -10 to + 60°C Relative Humidity: 15 to 60 %
2.5 <u>Artwork support</u>	
(a) Artwork for each batch will be given by BMRCL approx. 1 month before delivery. Artwork to be approved by BMRCL before each delivery. Cards shall be printed on both sides with four colour print process in Matte finish.	
(b) The printing shall be resistant to wear due to handling in the system.	
2.6 <u>Card Packaging, Labeling & Delivery</u>	
(a) Cards will be packaged in suitable cardboard boxes containing 1000 cards each.	
(b) Safe and insured supply of all lots.	
(c) Supply to be done as per intimated date at employer's premises.	
(d) Cards to be supplied in suitable cartons ensuring safe storage under environmental variables such as humidity, temperature etc.	
(e) Further, the packing should prevent the cards from any accidental electrical or mechanical shock capable of inducing any operational / structural defect in the cards.	

(f)	On each box, a label will be set with following information. These indications must be readable when boxes are stacked.
(i)	Company logo
(ii)	Batch number
(iii)	Number of the box
(iv)	Number of cards
(v)	Manufacturing date and manufacturer reference
(vi)	Delivery location of cards
(vii)	Weight of the box (if requested)
(viii)	Serial number of cards.
(a)	CD containing engraved and unique IDs of cards shall be securely delivered with the batch.
(b)	Transport key for the supplied batch shall also be securely delivered to BMRCL.

Chapter – 3

Tests

3.1 General

- (a) For specifications / parameters covered under suitable certification from recognized standard laboratory / Institute, separate tests may not be required. But contractor shall submit batch-wise report for compliance.
- (b) The tests which require to be conducted at suitable approved laboratories (national / international) shall be duly conducted and reports for the same to be submitted by the contractor. Contractor shall provide a suitable testing plan document to establish the specified parameters / tests (within the scope of the delivery but not readily covered under standard certifications).
- (i) Contractor to provide a standard sampling plan and acceptance criterion table for such tests as a function of the batch size.
- (ii) Such tests to be conducted by the supplier in a suitable standard environment/laboratory using calibrated test equipments. BMRCL representative may also witness the tests.
- (iii) Test results shall be submitted for review of BMRCL after completion of tests.

3.2 First Article Inspection Tests (FAI) for first 200 cards:	
This includes measures of several physical and functional characteristics of cards.	
(a) Tests for Physical characteristic	All physical characteristic covered under ISO IEC 10373-1 standard (General characteristics tests). Physical specifications must be compliant as specified
(b) Card dimensions, material	Should meet the required specification. The surface should have matte finish. Card must have no defect on its surface such as hole & imperfection of surface.
(c) Tests for security	Security features must be compliant to specification. Test to open the card is made - The result must be: card/chip broken and unusable.
(d) Artwork Check	Card artwork shall meet the standard / quality of approved sample.

	Test for Artwork - Card artwork must resist to wear (Test conditions: Temperature: 35°C & Relative Humidity: 100 %) The printing must resist to loaded abrasive sliding against card. The base material must not be seen before
(e) Tests for Environmental conditions	All parameters listed in environmental conditions should meet the required specifications.
(f) Packaging defect	Packaging should be as specified.
3.3 Operational Test (at BMRCL test set-up)	
To demonstrate card compatibility with BMRCL AFC system, contractor shall conduct tests for:	
(a) Reading distance	Card shall comply to specification.
(b) Compatibility with BMRCL software and equipment	Card should support working with BMRCL equipment and application software.
Note: In case of any of the defect occurrence due to these parameters, the entire qualification will have to be made again from the beginning by card manufacturer.	
3.4 Factory Acceptance Tests (FAT)	To be done for all production batches. All tests / items covered in FAI shall be also included in FAT. Inlay has to be manufactured by vendor in house and same has to inspect in FAT.

3.5 Sampling and Defect Classification

- (a) Each measure to be numbered and have its own sampling plan (size of the sampled lot n and acceptance / rejection criteria). The sampling n must always be made on the whole batch; where $n = T \times B$; (T = number of sampled card in boxes; B = number of sampled boxes)
- (b) The Sampling n is made with the following rules:
- If the number of defective cards in the batch is equal or lower than the acceptance criterion, the batch is accepted
 - If the number of defective cards in the batch is greater than the acceptance criterion, the batch is rejected.
- (c) The defects to be classified as:

- Major defects: defect which causes problems in the normal use of the product and / or reduces its commercial value.
- Minor defect: defect, which does not influence the normal use of the product, but exhibits a non-compliant parameter.

In case of any type of defect occurrence in any of the specifications / parameters mentioned, the complete FAI / FAT must be made again.

Appendix 1

A. Bill of Quantities (for supply of Contactless Smart cards)

Sl.no.	Item	Quantity
1.	Contactless Smart Cards - MIFARE DESFire EV1 (4 Kbytes) Type A, matte finish Both side 4- colour printed artwork	3,00,000
	Total	3,00,000

Note: BMRCL may exercise the option to vary the quantity to be procured either in batches or over all by additional 50% (i.e. Total 4,50,000). Contractor shall supply varied quantities at the pro-rata rates as per terms and conditions agreed in the contract.

B. Schedule of Supply

Delivery to be done in batches as mentioned below. Artwork for each batch will be given by BMRCL approximately 1 month before delivery.

Sl.no.	Item	Schedule
1.	Placement of firm purchase order (LoA).	D ₀
2.	Testing of cards (200 sample cards)	D ₀ + 15 days
3.	Delivery of 2,00,000 cards	D ₀ + 45 days
4.	Delivery of 1,00,000 cards	D ₀ + 180 days

Note: BMRCL may request for supply advancement by 1 month in respect of sl. no. 4.

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