

# **DELHI METRO RAIL CORPORATION LTD.**

## **TENDER DOCUMENT**

TENDER Notice No : **DMRC/O&M/S&T/11/CBT Dated 21.11.2011**

Name of the Work : **Design, Development, Supply, Testing, Commissioning, Integration with DMRC's LMS/LCMS and maintenance of SCROM 1.2 compliant E-Learning Modules on Signaling, Telecommunication and Automatic Fare Collection System  
and  
Supply, Installation, Testing, Commissioning and maintenance of LCMS/LMS System for S&T.**

Sale of Tender Documents : : **5th December 2011 between 10.30 Hours to 17:00 hrs  
and upto 12.00 Hours on 6th January 2012.**

Date for Receipt of Tenders : **6th January 2012 upto 15.00 Hours**

Date of Opening of Tender : **6th January 2012 at 15.30 Hours**

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## SECTION – I

### NOTICE INVITING TENDER

#### 1.1 GENERAL

Delhi Metro Rail Corporation Limited invites Sealed tender for “**Design, Development, Supply, Testing, Commissioning, Integration with DMRC’s LMS/LCMS and maintenance of SCROM 1.2 compliant E-Learning Modules on Signaling, Telecommunication and Automatic Fare Collection System**

and

**Supply, Installation, Testing, Commissioning and maintenance of LCMS/LMS System for S&T.”** as per details below:

<b>Tender Notice No.</b>	<b>DMRC/O&amp;M/S&amp;T/11/CBT Dated 21.11.2011</b>
<b>Name of work</b>	<p><b>Design, Development, Supply, Testing, Commissioning, Integration with DMRC’s LMS/LCMS and maintenance of SCROM 1.2 compliant E-Learning Modules on Signaling, Telecommunication and Automatic Fare Collection System</b></p> <p style="text-align: center;"><b>and</b></p> <p><b>Supply, Installation, Testing, Commissioning and maintenance of LCMS/LMS System for S&amp;T, Delhi Metro Rail Corporation Ltd., Delhi.</b></p> <p>The scope of works shall include</p> <p>i) Development of CBT</p> <p>ii) Uploading of developed CBT at DMRC server system.</p> <p>iii) Integration of developed CBT with DMRC’s existing LMS.</p> <p>iv) Commissioning and demonstration of all the features of the developed CBT.</p> <p>v) Training to DMRC Personnel for minor addition, alteration and modifications of the CBT modules.</p> <p>vi) Supply of LCMS/LMS as per the specifications.</p> <p>vii) Installation, Testing and commissioning of the LCMS/LMS.</p>
<b>Approx. Cost</b>	<b>Rs.47, 50,000/- (Rupees Forty Seven Lacs Fifty Thousand Only)</b>
<b>Completion period</b>	<b>09(Nine) months</b>
<b>Earnest Money</b>	<b>Rs. 95,000 (Rs. Ninty Five Thousand Only/)</b>
<b>Validity of Offer</b>	<b>180 Days</b>
<b>Cost of Tender Document</b>	<b>Rs.5000/-+ 5% VAT= Rs.5250/- (Rupees Five thousand two hundred Fifty only)</b>
<b>Commencement of sale of Tender Document</b>	<b>5th December 2011 from 10.30 Hours</b>
<b>Closure date of sale of Tender Document</b>	<b>6th January 2012, 12.00 Hours</b>
<b>Date / Time of receipt of tenders</b>	<b>6th January 2012 up to 15.00 Hours</b>
<b>Date / Time of opening of Tender</b>	<b>6th January 2012, 15.30 Hours</b>
<b>Eligibility Criteria</b>	<p>(a) The tenderer should have expertise for the execution of the similar work</p> <p>(b) The tenderer should have experience of having satisfactorily executed similar works during last 5 (Five) years ending last day of month previous to the one in which the tender is invited, should be either of the following:</p> <p>(i) Three similar completed works, each costing not less than Rs. 19 lakhs (Rupees Nineteen lakhs).</p> <p style="text-align: center;">Or</p> <p>(ii) Two similar completed works, each costing not less than Rs. 23,75,000 (Rupees Twenty Three Lakhs Seventy Five Thousand).</p>

	<p style="text-align: center;"><b>Or</b></p> <p style="text-align: center;"><b>(iii) One similar completed work, costing not less than Rs. 38 Lakhs (Rupees Thirty Eight Lakhs).</b></p> <p><b>(c) The tenderer should have skilled trained technical staff (Diploma/Degree in related field.) on the roll of the firm.</b></p> <p><b>Note : 1. Successfully completed portion of ongoing works for which the payment has been received shall also be considered for qualifying this criteria.</b></p> <p><b>2. A WORK OF SIMILAR NATURE MEANS “DESIGN, DEVELOPMENT, SUPPLY, INSTALLATION, TESTING, COMMISSIONING &amp; MAINTENANCE OF SCORM 1.2 COMPLIANT CBT AND SUPPLY, INSTALLATION, TESTING, AND COMMISSIONING OF LMS/LCMS FOR GOVERNMENT ORGANISATIONS / PUBLIC SECTOR UNDERTAKINGS / TRAINING INSTITUTES CONTROLLED OR PROMOTED BY GOVERNMENT ORGANISATIONS AS WELL AS PUBLIC SECTOR UNDERTAKINGS / ACADEMIC INSTITUTES SUCH AS UNIVERSITIES EITHER RECOGNIZED BY GOVERNMENT ORGANISATIONS OR BY UNIVERSITY GRANT COMMISSION / LIMITED COMPANIES.”</b></p>
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1.2 The Tender documents can be obtained from the office of Dy.General Manager/S&T/III, 6<sup>th</sup> Floor, Metro Bhawan, Fire Brigade Lane, Barakhamba Road, New Delhi-110001 and will also be available on Website “www.delhimetrorail.com” from 05.12.2011 The same can be downloaded and used as tender documents for submitting the offer. However, a Demand Draft amounting Rs. 5250/- (Rupees Five Thousand Two Hundred Fifty Only) in favour of DMRC Ltd, Payable at New Delhi, shall be enclosed towards cost of tender document along with the offer.

1.2.1 The Purchased Tender Document is not transferable. Also the cost of Tender Document is neither transferable nor refundable.

### 1.3. **COMPLETION PERIOD**

1.3.1 Works envisaged under this contract are required to be completed in all respects within a period of 09 months from the date of issue of LOA.

The Tenderer should not assume that his bid shall automatically be accepted. The same should contain all technical, Financial & other details as required for the consideration of tender.

#### 1.3.2 **Tender document consists of the following:**

- Notice Inviting Tender
- Scope of Work
- Tender price
- Instructions to Tenderers
- Special Conditions of Contract
- Bill of Quantities.
- Technical Specification for Development of CBT

1.3.3. Employer’s General conditions of contract are deemed to be part of tender papers. These can be obtained from the office of Dy. General Manager/S&T/III on separate request.

1.3.4 The Contract shall be governed by the tender documents.

1.3.5 The Tenderer may obtain further information in respect of these tender documents from the office of **Dy.General Manager/S&T/III, 6<sup>th</sup> Floor, Metro Bhawan, Fire Brigade Lane, Barakhamba Road, New Delhi-110001.**

1.3.6 Tenderer is cautioned that the tender containing any material deviation from the tender document, which consists of NIT, Instructions to Tenderers, General conditions of contract, Special Conditions of Contract, Bill of quantities, is liable to be summarily rejected as non-responsive, as mentioned in the clause of 1.3.2 of NIT.

1.3.7 DMRC reserves the right to accept or reject any or all proposals without assigning any reasons. No tenderer shall have any cause of action or claim against DMRC for rejection of his proposal.

**Dy.General Manager/S&T/III,  
6<sup>th</sup> Floor, Metro Bhawan,  
Fire Brigade Lane,  
Barakhamba Road,  
New Delhi-110001.**

## SECTION – II

### SCOPE OF WORK

The work involves **“Design, Development, Supply, Testing, Commissioning, Integration with DMRC’s LMS/LCMS and maintenance of SCROM 1.2 compliant E-Learning Modules on Signaling, Telecommunication and Automatic Fare Collection System**

**and**

**Supply, Installation, Testing, Commissioning and maintenance of LCMS/LMS System for S&T, Delhi Metro Rail Corporation Ltd., Delhi”.**

The CBT modules shall be developed in terms of learning hours.

A Learning hour comprises of approximately 25 to 60 Screens depending upon the contents of the screens as detailed under clause 30 of SCC.

The CBT modules shall be having the following development cycle levels.

- a. State of Raw Content – “High Level of complexity” i.e. when there is meager content, or is in the people’s heads. Need to go back and forth with the client and research etc.
- b. Instructional Design – “Comprehensive Instructional Design” i.e. New Course or developed from existing instructor led courses; Requires extensive curriculum design involving Needs Analysis, Audience Profiling, developing course objectives, creation of design documents, content restructuring and storyboarding.
- c. Production Levels – Number of graphics: 1 per screen (illustrations/Pictures) and Number of animations: 1 per 2 Screens with Flash/suitable animation of maximum duration of 150 Seconds.
- d. Interactivity Levels – “Good Interactivity” i.e. on click, open dialog boxes, standard quizzing, additional information, zoom option where needed.

#### **1. Design, Development & Supply-**

a).The Design, Development & Supply of CBT Modules shall include SCROM 1.2 compliant CBT required as per Technical Specification (Section-V).

b).The Supply, Installation, Testing, Commissioning of LCMS/LMS System for S&T, DMRC. The LCMS/LMS shall be capable of meeting or exceeding all the functional requirements/ system specifications as mentioned in the Technical Specifications (Section-V) with complete license with respect to number of user counts and various modules.

**2. Integration, testing and commissioning of already developed and the newly developed CBT Modules with DMRC’s LMS.**

**3. Demonstrating to the DMRC representative, the complete functional performance of the LCMS/LMS with respect to its various modules.**

The developed SCROM 1.2 compliant CBT shall be integrated with DMRC’s Learning Management System (LMS). Testing and commissioning of the developed CBT will be done by the Tenderer jointly with DMRC representative. The Tenderer shall depute competent engineer (qualified staff) for the same. The Tenderer shall submit a detailed commissioning test schedule for DMRC approval and full record of test conducted shall be maintained by the Tenderer and handed over to DMRC along with commissioning.

**4. Documentation**

The Tenderer shall undertake to supply all necessary documents as per DMRC's requirement free of cost. This shall mainly consist of the following: -

**a)** Three sets of complete documents containing Design Parameters, Development stages including Script, Story Boarding, Self assessment, Details of the various Tools used in development, Integration procedures, Reference materials, Prototyping, Testing Parameters & procedures, Acceptance Tests, Test Reports, Source Code of the software, Integration with DMRC's LMS Procedures etc. of CBT Developed along with soft copies.

**b)** Document detailing Clear cut Time line approach and methodology to complete the work in time, outlining details of each stage such as initial brainstorming session, finalization of ideas, scripting and development of preliminary story board, stages of approvals, nos. of modules to be taken parallel at the same time, etc.

**c)** Any other Documents as required and agreed between DMRC and selected Tenderer.

#### **5. Training**

The Tenderer shall provide adequate training as per Clause 19 of Special Conditions of Contract to DMRC personnel in Design, Development and Integration with DMRC's LMS, Testing & Commissioning and maintenance of CBT and also LMS/LCMS supplied under this contract.

#### **6. Upgradation & Maintenance**

The Tenderer shall upgrade and maintain the developed CBT and LCMS/LMS, during warranty period of 2 years from the date of commissioning. The Tenderer shall depute requisite qualified staff for upgradation and maintenance of the CBT.

**7.** The Tenderer shall undertake its own study/survey of Training Material & Training Practices used at DMRC and make his own assessment of the work involved in Development of CBT.

**8.** The Tenderer without any extra cost will supply any other equipment / design / component not mentioned above but needed to make the entire system successful/ functional.

## SECTION – III

# TENDER PRICES AND SCHEDULE OF PAYMENT

### 1. Tender Prices

- a. Unless explicitly stated otherwise in the Tender Documents, the rate quoted by the Contractor shall be for the complete work as per Bill of Quantity. **Payment shall be made as per accepted rate and as per clause-31 of Special Conditions of Contract.**
- b. **The rate quoted by the tenderer shall be inclusive of all duties, taxes, fees, octroi and other levies, labour etc.**
- c. The Employer has the discretion to vary the quantities required for execution of work by plus/minus 25% over & above the quantities provided in the contract at the same rates as accepted in LOA.

**Design, Development & Supply of SCROM 1.2 compliant Signalling CBT for Delhi Metro Rail Corporation Ltd., Delhi.**

**INSTRUCTIONS TO TENDERERS (ITT)**

**1.0 TENDER INVITATION**

1.1 Delhi Metro Rail Corporation Limited invites sealed tender for “Design, Development & Supply and integration with DMRC’s LMS/LCMS, testing commissioning and maintenance of SCROM 1.2 compliant E-Learning Modules on Signaling, Telecommunication and Automatic Fare Collection System

and

supply, installation, testing, commissioning and maintenance of LCMS/LMS System for S&T” as second phase of S&T CBT project for Delhi Metro Rail Corporation Ltd., Delhi.” for the work as per Tender Notice.

**2.0 ELIGIBILITY CRITERIA**

2.1 (a) The tenderer should have expertise for the execution of the similar work

(b) The tenderer should have experience of having satisfactorily executed similar works during last 5 (Five) years ending last day of month previous to the one in which the tender is invited, should be either of the following:

(i) Three similar completed works, each costing not less than Rs. 19 lakhs (Rupees Nineteen lakhs).

Or

(ii) Two similar completed works, each costing not less than Rs. 23,75,000 (Rupees Twenty Three Lakhs Seventy Five Thousand).

Or

(iii) One similar completed work, costing not less than Rs. 38 Lakhs (Rupees Thirty Eight Lakhs).

(c) The tenderer should have skilled trained technical staff (Diploma/Degree in related field.) on the roll of the firm.

**Note : 1.** Successfully completed portion of ongoing works for which the payment has been received shall also be considered for qualifying this criteria.

**2. A WORK OF SIMILAR NATURE MEANS “DESIGN, DEVELOPMENT, SUPPLY, INSTALLATION, TESTING, COMMISSIONING & MAINTENANCE OF SCORM 1.2 COMPLIANT CBT AND SUPPLY, INSTALLATION, TESTING, AND COMMISSIONING OF LMS/LCMS FOR GOVERNMENT ORGANISATIONS / PUBLIC SECTOR UNDERTAKINGS / TRAINING INSTITUTES CONTROLLED OR PROMOTED BY GOVERNMENT ORGANISATIONS AS WELL AS PUBLIC SECTOR UNDERTAKINGS / ACADEMIC INSTITUTES SUCH AS UNIVERSITIES EITHER RECOGNIZED BY GOVERNMENT ORGANISATIONS OR BY UNIVERSITY GRANT COMMISSION / LIMITED COMPANIES.”**

**3.0 TENDER DOCUMENTS**

3.1 The Tender documents consist of

(a) Notice Inviting Tender

(b) Scope of Work

(c) Tender prices

(d) Instructions to Tenderer

(e) Special conditions of Contract

(f) Bill of Quantities

(g) Technical Specification for development of CBT.

#### 4.0 GENERAL INSTRUCTIONS

4.1 It will be imperative on each Tenderer to fully acquaint himself with all the local conditions including uploading of contents based on computer animation / graphics on various approved topics of Signalling systems at DMRC, Commissioning & Testing and other factors which would have any effect on the performance of the contract and cost of the stores. No request for the change of price, or time schedule of delivery of deliverables shall be entertained after the offer is accepted by the DMRC on account of any local condition or factors.

4.2 In the event of the Tenderer decides to have a field visit before furnishing his proposals, he may apply to DMRC, Delhi for permission in this regard. Such permission will be given by DMRC but the expenses in this regard will be borne by the Tenderer himself.

4.3 The Tenderers are advised to study the tender documents carefully. Any submission of tender shall be deemed to have been done after a careful study and examination of these documents with full understanding of the implication thereof. These conditions and specifications shall be deemed to have been accepted unless otherwise, specifically commented upon by the Tenderer in his quotation. Failure to adhere to anyone or all these instructions may render his offer liable to be ignored without any reference.

4.4 Should a Tenderer find discrepancy in, or omission from the drawing or any of the tender documents or has any doubt to their meaning, he should at once notify DMRC who may send a written clarification to all tenderers.

#### 5.0 COMPLETION OF TENDER DOCUMENTS

5.1 Only original computer printout of Tender Document shall be used in case it has been downloaded from Website. Photocopies are not acceptable.

5.2 All information shall be either typewritten or written neatly in indelible ink.

5.3 All information in the offer must be in English. Information in any other language must be accompanied by its authenticated translation in English; failure to comply with this may render the offer liable to be rejected. In the event of any discrepancy between the offer in a language other than English and its English translation, the English translation shall prevail.

5.4 All offers in the prescribed forms should be submitted by the time and date fixed for the receipt of the offers. Offers received after the stipulated time and date will be summarily rejected.

5.5 Every possible fluctuation in the rates should be considered and kept in view before quoting the rates and no reclaim on this account shall be entertained by DMRC under any circumstances.

5.6 The rate should be quoted in figures as well as in words, if there is variation between the rates quoted in figures and in words, the rates quoted in 'Words' shall be taken as correct. If more than one or improper rates are tendered for the same items, the tender is liable to be rejected.

5.7 Tenders containing erasures and alterations in the tender documents are liable to be rejected. **Any corrections made by the Tenderer/s in his / their entries should be in Ink and must be attested by him / them under full signature and date.**

5.8 Additional conditions or stipulations if any must be made by the Tenderer/s in a covering letter with tender. DMRC reserves the right not to consider conditional tenders and reject the same without assigning any reason. Only those additional conditions, which are explicitly accepted by DMRC, shall form part of the contract.

**6.0 GENERAL & TECHNICAL COMPLIANCE**

6.1 The system offered shall be in accordance with the Technical Specifications given in Section V. Details of variations from the Technical Specifications, if any, should be clearly indicated in the offer.

6.2 The Tenderer shall indicate for each section of the tender document that either his tender complies in every respect with the requirements of each clause and sub-clause of General Conditions of Contract (GCC), Special Conditions of Contract (SCC) & Technical Specifications or if not, precisely how they differ from the requirements of the Tenderer. In later case, he shall furnish detailed justifications and for the deviations proposed.

6.3 The compliance statement of GCC, SCC & Technical Specifications should be unambiguous. The clauses which are being complied by the Tenderer should be shown as “complied”. The clauses where Tenderer is unable to comply, deviation should be clearly brought out. Remarks like “see Technical Literature attached” or other remarks of similar nature should not be made. Tenderer should not assume that DMRC will interpret the compliance from brochures or technical manuals attached by him. However, Tenderer should attach adequate technical details and description of the system quoted so that DMRC, if desired, can also independently verify the compliance remarks given by the tender.

6.4 The compliance statement should be given for each individual class and sub-class of GCC, SCC & Technical Specification separately. If the Tenderer does not give unqualified compliance to all the clauses or does not provide a clear and detailed deviation from the clauses and sub-clauses of GCC, SCC & Technical Specifications, Tender is liable to be rejected without asking further clarification from the Tenderer.

6.5 **DMRC’s Right:** The DMRC reserves the right to accept or reject these deviations and its decision thereon shall be final. The deviations quoted by the Tenderer will become part of contract agreement only to the extent to which they are specifically mentioned as accepted in the letter of acceptance.

6.6 **Signing of Tenders:** Any individual(s) signing the tender or other documents connected therewith should specify whether he is signing -

a) as Chief Executive of the Firm making the offer.

b) as a Director, Manager or Secretary in the case of the authority conferred by Memorandum of Association.

6.7 In the case of a firm not registered under the Indian Partnership Act, all the partners or the attorney duly authorized by all of them should sign the tender and all other connected documents. The original power of attorney or other documents empowering the individual or individuals to sign should be furnished to the Employer for verification, if required.

6.8 In case the offer is submitted through authorized agents, a clear authorization letter from the Principal must accompany the tender. Offer from other agents, brokers and middleman shall not be accepted.

6.9 The Tenderer/s or such person/s on his / their behalf who is / are legally authorized to sign for him / them must sign with full name in capital each page of the tender papers at the bottom with date. A reference to the total number of pages comprising the offer must be made at the top right hand corner of the first page and preferably the page number format ‘X of Y’ shall be adopted for the tender offer.

**7.0 EARNEST MONEY DEPOSIT**

7.1 The tender must be accompanied by a sum of **Rs. 95,000 (Rs. Ninty Five Thousand Only)** as EMD in the manner prescribed in Para 7.2, failing which the tender shall be summarily rejected.

7.2 The earnest money of the requisite amount referred to in Para 7.1 above is required to be deposited in any of the following form.

Pay order or demand drafts of the State Bank of India, or any of the nationalized banks or any of the schedule commercial bank, must have an endorsement from the authority issuing such Pay order / DD that “received from M/s ..... and pledged in favour of DMRC Ltd., Payable at New Delhi”.

7.3 The EMD should at least be valid for a period of 180 days. If the validity of the offer is extended, the EMD duly extended shall also be furnished, failing which the offer of the aforesaid shall not be considered.

7.4 The EMD is liable to be forfeited if the Tenderer withdraws or amends impairs or derogates from the tender in any respect within the period of validity of his offer.

7.5 If the tender is accepted, the amount of EMD of the Tenderer will be held as initial security deposit for due and faithful fulfillment of the contract.

7.6 If the successful Tenderer fails to furnish the Security Deposit required in Clause 4.2 of the Special Conditions of Contract and fails to submit the formal contract agreement duly signed within fifteen days, then the EMD shall be liable to be forfeited by DMRC.

7.7 The EMD of all unsuccessful tenderers will be returned by the DMRC within reasonable time of the finalization of the tender.

7.8 No interest shall be allowed on the earnest money.

7.9 Earnest money in the form of Pay Order or Demand Draft will only be accepted.

7.10 Standing Earnest Money Deposit if any with DMRC will not be accepted.

7.11 Any tender not accompanied by EMD will be summarily rejected.

**8.0 COMPLETION OF TENDER DOCUMENT**

8.1 The Tenderer shall quote for the complete work for all the items, as given in the Bill of Quantity. Offers received for part of the schedule will not be considered and shall be rejected.

8.2 The rates quoted by the Tenderer against items contained in Bill of Quantity of the tender document, shall be inclusive of all Taxes (Income/Sales Tax, Surcharges or Octroi) such as Central/State/Local, and shall be inclusive of all costs such as VAT/ works/ Service tax as applicable in Delhi.

8.3 An undertaking that the components/modules as also the main equipment quoted in the Bill of Quantity will be supplied at the same unit rates until the end of the warranty period and subsequently also at the rates mutually agreed to. It shall also contain an irrevocable undertaking that before the upgradation/discontinuation of any component/module, a clear 24 months notice shall be given to DMRC.

8.4 DMRC reserves the right to increase/decrease the scope of work by 25%, any time during the currency of contract. It should be noted that this excludes additional quantities that may be required as warranty replacement due to defective design and development, etc.

8.5 The Tenderer must keep their offer open for a minimum period of 180 days from the date of opening of tender.

**9.0 SUBMISSION OF TENDER**

9.1 The completed Tender Document shall be put in an envelope and the envelope will bear “Design, Development, Supply, Testing, Commissioning, Integration with DMRC’s LMS/LCMS and maintenance of SCROM 1.2 compliant E-Learning Modules on Signaling, Telecommunication and Automatic Fare Collection System and Supply, Installation, Testing,

Commissioning and maintenance of LCMS/LMS System for S&T, Delhi Metro Rail Corporation Ltd., Delhi.” at the top and name & Address of the Tenderer at the bottom left.

9.2 Submission of Tender Document through internet is not permitted.

9.3 The tender Document complete in all respect as mentioned above shall be addressed to:

**Dy.General Manager/S&T/III, 6<sup>th</sup> Floor, Metro Bhawan, Fire Brigade Lane, Barakhamba Road, New Delhi-110001.**

9.4 Tenders sealed and super-scribed as aforesaid shall be dropped in the Tender Box kept at the office of Dy.General Manager/S&T/III, 6<sup>th</sup> Floor, Metro Bhawan, Fire Brigade Lane, New Delhi-110001 for the purpose before the date & time indicated in Tender Notice.

9.5 Tenders sealed and super-scribed as aforesaid can also be sent by registered post to the Dy.General Manager/S&T/III, 6<sup>th</sup> Floor, Metro Bhawan, Fire Brigade Lane, New Delhi-110001, Delhi, but a tender, which is received after the time and date specified in Tender Notice, will not be considered. Any tender delivered or sent otherwise will be at the risk of the tenderers. DMRC shall not be responsible for any delay on postal/courier account.

## **10. DOCUMENTS TO BE SUBMITTED ALONG WITH TENDER**

The Tender properly bound and serial numbered shall essentially contain the following: -

10.1 In case of tender document downloaded from website, Demand Draft towards cost of tender document,

10.2 EMD in prescribed form as per Clause 7.0 of this Section.

10.3 In case of Joint venture/ Partnership, the agreement/deed document in this regard.

10.4 Duly Signed Certificates from the Organizations for which they worked/working and having completed the Similar works by the Tenderer during last five years with the following details :-

- Name of the Organization with whom they worked / are working
- Type of Organization (Govt./PSU/Training Institute/Academic Institute/ Limited company)
- Description of works
- Approximate value of contract at the time of award
- Date of award
- Date of scheduled completion of work
- Actual date of completion
- Total payments made to the Tenderer against completion of contract

10.5 A CD/DVD containing 15 to 30 minutes sample module of SCORM 1.2 compliant CBT of the completed/in progress work. The sample module shall have graphics, animations, Audio, Video, etc. Also a 15 to 30 minutes presentation, features and specifications of LCMS/LMS proposed.

10.6 Details of works on hand, with supportive documents/certificate from the organizations with whom the tenderer worked/is working, indicating the following:-

- Description of works
- Contract value
- Approximate value of balance work yet to be done and
- Date of award

10.7 A brief outline of the development cycle proposed along with diagrams and drawings, the software / hardware used in the development cycle, cross-reference with the system specifications.

10.8 A detailed statement indicating the compliance or deviation on each clause/sub-clause of General Conditions of Contract, Special Conditions of Contract and Technical Specifications given in these documents. In case of deviations, detailed justification/technical specification of the alternative proposal on the prescribed form (Form B).

- 10.9 A list of all the components and modules to be used including Hardware & Software.
- 10.10 A list of work station/simulator, test equipment and other special tools as required for data input, testing, integration and maintenance etc. of the system and a detailed write-up about the procedure to be adopted for use of the same.
- 10.11 The detailed credentials and quality control facilities, adequate design capability, technical know-how and experience of designing, supplying, integrating and commissioning satisfactorily such projects.
- 10.12 Tenderer Scheme of Work and Time Schedule with detailed Bar Chart. Document detailing Clear cut Time line approach and methodology to complete the work in time, outlining details of each stage such as initial brainstorming session, finalization of ideas, scripting and development of preliminary story board, stages of approvals, nos. of modules to be taken parallel at the same time, etc.
- 10.13 The details of deployment of manpower on hand and proposed to be engaged during Design, Development, integration with DMRC's LMS, commissioning and maintenance of the work.
- 10.14 CD/DVD-ROM containing deviations, technical compliance, schedule, manpower planning, scheme of work & time schedule.

### **11.0 OPENING OF TENDER**

- 11.1 The tenders will be opened on the specified date & time as per Tender Notice in the office of **Dy.General Manager/S&T/III, 6<sup>th</sup> Floor, Metro Bhawan, Fire Brigade Lane, New Delhi-110001** and name of the Tenderer participated will be read out in the presence of such tender/s whosoever is / are present.
- 11.2 Tenders, which are received after the time and date specified above, will not be considered.
- 11.3 In case the intended dates for opening of tenders is declared a holiday, the tenders will be opened on the next working day at the same time.

### **12.0 TENDER EVALUATION:**

#### **The Tender Evaluation shall be done in the following manner:**

The tender shall be considered eligible only if it fulfills the technical and other requirements as laid down in clause 2 & Clauses 10.1 to 10.9 of ITT. The eligible tenders shall be rationalized after arithmetic checking to determine the lowest tender.

### **13.0 ACCEPTANCE OF TENDER**

- 13.1 "IF THE TENDERER/S DELIBERATELY GIVES A WRONG INFORMATION / WHOSE CREDENTIALS / DOCUMENTS IN HIS / THEIR TENDERS AND THEREBY CREATE(S) CIRCUMSTANCES FOR ACCEPTANCE OF HIS/THEIR TENDER, DMRC RESERVES THE RIGHT TO REJECT SUCH TENDER AT ANY STAGE, BESIDES, SHALL SUSPEND THE BUSINESS FOR ONE YEAR.
- 13.2 The authority for acceptance of tender rests with Dy.General Manager/S&T/III, who does not undertake to assign reasons for declining to consider any particular tender or tenders. He also reserves the right to accept the tender in whole or in part or to divide the tender amongst more than one tender, if deemed necessary.
- 13.3 The successful tenderer/s shall be required to execute an agreement with DMRC for carrying out the work as per agreed conditions. The cost of stamp for the agreement will be borne by tenderer (Form-D).
- 13.4 The tenderer/s shall not increase his/their rate. In case DMRC negotiates for reduction of rates, such negotiations shall not amount to cancellation or withdrawals of the original offer and rates originally quoted will be binding on the tenderer/s.
- 13.5 The tenderer/s shall submit an analysis of rates ,if called upon to do so.

**14.0 ADDRESS FOR COMMUNICATION**

14.1 The Tenderer shall indicate fully and clearly his postal address, telephone numbers, and telegraphic address, fax numbers and email , if any. Any communication sent to the Tenderer at his said address, shall be deemed to have reached timely, notwithstanding the fact that the communication could not reach the Tenderer at all or in time because of any inaccuracy or defect in the said address.

**15.0 TECHNICAL DISCUSSION**

15.1 Technical discussions may be held with the tenderers whenever necessary. Insufficiency of technical details, if any, may also be indicated to them. Based upon these discussions, the Tenderer will submit in writing the details of clarifications required by DMRC.

**ANNEXURE- I****CHECK LIST OF DOCUMENTS TO BE SUBMITTED WITH THE TENDER  
COMPILED FROM THE PROVISIONS IN THIS VOLUME**

<b>Sl. No.</b>	<b>Document</b>	<b>Yes/No</b>
	<b>TENDER PACKAGE COMPRISING OF:</b>	
	Tender Security	
	Tender documents	
	Power of attorney for individuals signing on behalf of Company/Firm Or Power of attorney in favour of the leading member of Joint Venture / Consortium.	
	Financial Data (Form T-V)	
	i. Pan No. as per Income Tax Act. i. Sales Tax Clearance Certificate (STCC) / Value Added Tax Clearance Certificate (VATCC) and registration with contract cell of Sales Tax Department as per “Delhi Sales Tax Act 1999”. ii. PF Registration No. iii. ESI Registration No. & Code No. as per ESI Act 1948.	
	Statement of deviations from Tender Documents (Form B)	
	Experience record (Form T-II).	
	Bill of Quantities	
	Resources proposal for the work personnel. T-III	

**INDEX ON****PROFORMA OF FORMS**

- |    |   |             |
|----|---|-------------|
| 1. | <b>PROFORMA OF FORMS – GENERAL</b><br>(Items (iv) applicable only for successful tenderers) | <b>FORM</b> |
|    | i. Form of Tender with Appendix   | A           |
|    | ii. Performa for Statement of Deviations  | B           |
|    | iii. Form of Performance Security (Guarantee) by Bank                                       | C           |
|    | iv. Form of Agreement   | D           |
| 2. | <b>PROFORMA OF FORMS – POST QUALIFICATION PARTICULARS</b>                                   | <b>FORM</b> |
|    | i. General Information  | T-I         |
|    | ii. Experience Record   | T-II        |
|    | iii. Resources Proposed for the Work-Personnel  | T-III       |
|    | iv. Financial Data  | T-V         |

**FORM OF TENDER**

- Note:
- i. The Appendix forms part of the Tender
  - ii. Tenderers are required to fill up all the blank spaces in this Form of Tender and Appendix.

Name of Work: As in the NIT

**To  
Managing Director ,  
Delhi Metro Rail Corporation Limited,  
6th Floor, Right Wing, Metro Bhawan,  
Fire Brigade Lane, Barakhambha Road,  
New Delhi-110001**

1. Having visited the site and examined the General Conditions of Contract as well as Special Conditions of Contract, Specifications, Instructions to Tenderers, for the execution of above named works, we the undersigned, offer to execute and complete such works and remedy defects therein in conformity with the said Conditions of Contract, Specifications, and Addenda for the sum of Rs. \_\_\_\_\_  
\_\_\_\_ (Amount in figures and words) for \_\_\_\_\_ or such other sum as may be ascertained in accordance with the said conditions.
2. We acknowledge that the Appendix forms an integral part of the Tender.
3. We undertake, if our Tender is accepted, to commence the works within 03days of issue of the LOA to commence and to complete the whole of the Works comprised in the Contract within 09 months calculated from the date of Issue of LOA, as indicated in the Appendix.
4. If our Tender is accepted, we will furnish a Bank Guarantee for Performance as security for the due performance of the Contract. The amount and form of such guarantee will be in accordance with Clause 5 of the Special Conditions of the Contract and as indicated in the Appendix.
5. We have independently considered the amount shown in Clause 57.5 of the General Conditions of Contract as liquidated damages and agree that they represent a fair estimate of the damages likely to be suffered by you in the event of the work not being completed in time.
6. We agree to abide by this Tender for a minimum period of 180 days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiry of that period or any extended period mutually agreed to.

7. Unless and until a formal Agreement is prepared and executed, this Tender, together with your written acceptance thereof, shall constitute a binding contract between us. WE DECLARE THAT THE SUBMISSION OF THIS TENDER CONFIRMS THAT NO AGENT, MIDDLEMAN OR ANY INTERMEDIARY HAS BEEN, OR WILL BE ENGAGED TO PROVIDE ANY SERVICES, OR ANY OTHER ITEM OF WORK RELATED TO THE AWARD AND PERFORMANCE OF THIS CONTRACT. WE FURTHER CONFIRM AND DECLARE THAT NO AGENCY COMMISSION OR ANY PAYMENT, WHICH MAY BE CONSTRUED AS AN AGENCY COMMISSION HAS BEEN, OR WILL BE, PAID AND THAT THE TENDER PRICE DOES NOT INCLUDE ANY SUCH AMOUNT.
8. We acknowledge the right of EMPLOYER, if he finds to the contrary, to declare our Tender to be non-compliant and if the Contract has been awarded to declare the Contract null and void.
9. We understand that you are not bound to accept the lowest or any tender you may receive.
10. If our Tender is accepted we understand that we are to be held solely responsible for the due performance of the Contract.

Dated this.....day of..... 2011

Signature .....

Name..... in the capacity of .....

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

Address .....

Witness – Signature .....

Name .....

Address .....

Occupation .....

**APPENDIX TO THE FORM OF TENDER**

	Condition of Contract	Clause No.	
i.	Amount of Bank Guarantee as Performance Security	5 of Special Conditions of Contract	10% of the Contract Price.
ii.	Contract Period from the date of issue of LOA	20 of Special Conditions of Contract	09 months From the date of issue of LOA

Signature of  
authorised  
signatory on behalf  
of Tenderer

Date .....

Name .....

Place .....

Address .....

**PROFORMA FOR STATEMENT OF DEVIATIONS**

(Refer Clause 6.2 of ITT)

1. The following are particulars of deviations from the requirements of the tender specifications:

Sr. No.	Clause	Deviations	Remark (including justification)	Cost of unconditional withdrawal (Rs.)

2. The following are particulars of deviations from the requirements of the "Instructions to Tenderers," "General Conditions of Contract" and "Special Conditions of Contract".

Sr. No.	Clause	Deviations	Remark (including justification)	Cost of unconditional withdrawal (Rs.)

Signature of Tenderer

**Note**

1. **Where there is no deviation, the statement should be returned duly signed with an endorsement indicating 'No Deviations'.**
2. **The Tenderer shall indicate price adjustment against each deviation, which he shall like to add to the tender price for unconditionally withdrawing of his deviations if the same are unacceptable to EMPLOYER.**

**ON RS. 100 STAMP PAPER**  
**FORM OF PERFORMANCE SECURITY (GUARANTEE) BY BANK**  
 (Refer Clause 5 of “Special Conditions of the Contract”)

1. This deed of Guarantee made this day of \_\_\_\_\_ 2012 between Bank of \_\_\_\_\_ (hereinafter called the “Bank”) of the one part, and Delhi Metro Rail Corporation Limited (hereinafter called “EMPLOYER”) of the other part.
2. Whereas Delhi Metro Rail Corporation Limited has awarded the Contract for -----  
-----  
----- Delhi Metro Rail Corporation Limited (hereinafter called “the contract”) to M/s \_\_\_\_\_ (Name of the Contractor) (hereinafter called “the Contractor”).
3. AND WHEREAS the Contractor is bound by the said Contract to submit to EMPLOYER a Performance Security for a total amount of Rs. \_\_\_\_\_ (Amount in figures and words).
4. Now \_\_\_\_\_ we \_\_\_\_\_ the Undersigned \_\_\_\_\_ (Name of the Bank) being fully authorised to sign and to incur obligations for and on behalf of and in the name of \_\_\_\_\_ (Full name of Bank), hereby declare that the said Bank will guarantee EMPLOYER the full amount of Rs. \_\_\_\_\_ (Amount in figures and Words) as stated above.
5. After the Contractor has signed the aforementioned Contract with EMPLOYER, the Bank is engaged to pay EMPLOYER, any amount up to and inclusive of the aforementioned full amount upon written order from EMPLOYER to indemnify EMPLOYER for any liability of damage resulting from any defects or shortcomings of the Contractor or the debts he may have incurred to any parties involved in the Works under the Contract mentioned above, whether these defects or shortcomings or debts are actual or estimated or expected. The Bank will deliver the money required by EMPLOYER immediately on demand without delay without reference to the Contractor and without the necessity of a previous notice or of judicial or administrative procedures and without it being necessary to prove to the Bank the liability or damages resulting from any defects or shortcomings or debts of the Contractor. The Bank shall pay to EMPLOYER any money so demanded notwithstanding any dispute/disputes raised by the Contractor in any suit or proceedings pending before any Court, Tribunal or Arbitrator/s relating thereto and the liability under this guarantee shall be absolute and unequivocal.
6. This Guarantee is valid for a period of 33 months from the date of signing.
7. At any time during the period in which this Guarantee is still valid, if EMPLOYER agrees to grant a time extension to the Contractor or if the Contractor fails to complete the Works

within the time of completion as stated in the Contract, or fails to discharge himself of the liability or damages or debts as stated under Para 5, above, it is understood that the Bank will extend this Guarantee under the same conditions for the required time on demand by EMPLOYER and at the cost of the Contractor.

- 8. The Guarantee hereinbefore contained shall not be affected by any change in the Constitution of the Bank or of the Contractor.
- 9. The neglect or forbearance of EMPLOYER in enforcement of payment of any moneys, the payment whereof is intended to be hereby secured or the giving of time by EMPLOYER for the payment hereof shall in no way relieve the bank of their liability under this deed.
- 10. The expressions "EMPLOYER", "the Bank" and "the Contractor" hereinbefore used shall include their respective successors and assigns.

In witness whereof I/We of the bank have signed and sealed this guarantee on the

\_\_\_\_\_ day of \_\_\_\_\_ (Month) 2012 being herewith duly authorized.

For and on behalf of the \_\_\_\_\_ Bank.

Signature of authorised Bank official

Name : .....

Designation : .....

I.D. No. : .....

Stamp/Seal of the Bank : .....

Signed, sealed and delivered  
for and on behalf of the Bank  
by the above named \_\_\_\_\_  
In the presence of :

Witness 1.

Signature .....

Name .....

Address .....

Witness 2.

Signature .....

Name .....

Address .....

**FORM OF AGREEMENT**  
(Refer Clause 13.3 of "Instructions to Tenderers")

This Agreement is made on the \_\_\_\_\_ day of \_\_\_\_\_ 2012 Between Delhi Metro Rail Corporation Limited, Metro Bhawan, Fire Brigade Lane, Barakhamba Road, New Delhi-110001 hereinafter called "EMPLOYER" of the one part and \_\_\_\_\_ (Name and Address of Contractor) hereinafter called "the Contractor" of the other part.

Whereas EMPLOYER is desirous that (\*\*\*) certain Goods and Services should be provided and) certain Works should be executed, Contract for -----of Delhi Metro Rail Corporation hereinafter called "the contract" and has accepted a Tender by the Contractor for the execution and completion of such works (\*\*\*) as well as guarantee of such works) and the remedying of defects therein.

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement words and expression shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz:
  - (a) Letter of acceptance
  - (b) General Conditions of Contract
  - (c) Special Conditions of Contract
  - (d) Notice Inviting Tender
  - (e) Technical Specification for LCMS/LMS and Development of CBT
  - (f) Bill of Quantities
  - (g) Form of Tender with Appendix
  - (h) Addendums, if any
  - (j) Other conditions agreed to and documented as listed below:
    - (i) Statement of deviations (if applicable)
    - (ii) Any other item as applicable
3. In consideration of the payments to be made by EMPLOYER to the Contractor as hereinafter mentioned, the Contractor hereby covenants with EMPLOYER to execute and complete the works by \*\* \_\_\_\_\_ and remedy any defects therein in conformity in all respects with the provisions of the Contract.
4. EMPLOYER hereby covenants to pay the Contractor in consideration of the execution and completion of the works and the remedying of defects therein, the Contract Price of \*\*Rs \_\_\_\_\_ being the sum stated in the letter of acceptance subject to such additions thereto or deductions there from as may be made under the provisions of the Contract at the times and in the manner prescribed by the Contract.

5. OBLIGATION OF THE CONTRACTOR

The contractor shall ensure full compliance with tax laws of India with regard to this contract and shall be solely responsible for the same. The contractor shall submit copies of acknowledgements evidencing filing of returns every year and shall keep EMPLOYER fully indemnified against liability of tax, interest, penalty etc. of the contractor in respect thereof, which may arise.

6. JURISDICTION OF COURT

The Courts at Delhi/New Delhi shall have the exclusive jurisdiction to try all disputes arising out of this agreement between the parties.

IN WITNESS WHEREOF the parties hereto have caused their respective Common Seals to be hereunto affixed / (or have hereunto set their respective hands and seals) the day and year first above written.

For and on behalf of the Contractor

For and on behalf of EMPLOYER

Signature of the authorized official

Signature of the authorized official

Name of the official

Name of the official

Stamp/Seal of the Contractor

Stamp/Seal of EMPLOYER

SIGNED, SEALED AND DELIVERED

By the said \_\_\_\_\_ Name

By the said \_\_\_\_\_ Name

on behalf of the Contractor in the presence of:

on behalf of EMPLOYER in the presence of:

Witness \_\_\_\_\_

Witness \_\_\_\_\_

Name \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Note :

- + To be made out by EMPLOYER at the time of finalization of the Form of Agreement.
- \*\* Blanks to be filled by EMPLOYER at the time of finalization of the Form of Agreement.
- \*\*\* to be deleted if not applicable

**GENERAL INFORMATION**

(Refer Clauses 6.7 of ITT)

Notes :

- (i) Attach an attested photocopy of Certificate of Registration and ownership as well as of Constitution and legal status.

1. Names of participating member

(a) .....

2. Address, telephone, telefax, cable numbers

Registered Office

Office for correspondence

(a) ..... .....

(b) ..... .....

(c) ..... .....

3. Contact persons address, telephone etc.

(a) ..... .....

(b) ..... .....

(c)  
.....

**EXPERIENCE RECORD**

(Refer Clause 10.4 of ITT)

## 1. Details of experience in Development of CBT etc.

Sl. No.	Period	Details of work handled	Total Cost of work in Rs.	Remarks
(1)	(2)	(3)	(4)	(5)

Notes :

- i) Details submitted in any other Performa will not be considered.
- ii) **The details of work including the cost of the work should preferably be supported by self-attested copy of each client's certificate.**
- iii) Additional pages may be attached if required.
- iv) The authorized signatory of the Tenderer must sign all the pages.

**EXPERIENCE RECORD**

(Refer Clause 10.4 of ITT)

## 2. Details of experience in Development of LCMS/LMS etc.

Sl. No.	Period	Details of work handled	Total Cost of work in Rs.	Remarks
(1)	(2)	(3)	(4)	(5)

Notes :

- i) Details submitted in any other Performa will not be considered.
- ii) **The details of work including the cost of the work should preferably be supported by self-attested copy of each client's certificate.**
- iii) Additional pages may be attached if required.
- iv) The authorized signatory of the Tenderer must sign all the pages.

**DETAILS OF PERSONNEL**

(Refer Clause 4.17 of Technical Specification for Development of CBT and installation, testing and commissioning of LCMS/LMS)

S. No.	Designation	Qualifications	No. Of Personnel Available
A	B	C	D
1			
2			
3			
4			
5			

**FINANCIAL DATA**

(Refer Clause 10 of ITT)

<b>S. No.</b>	<b>Description</b>	<b>Year 2009-2010</b>	<b>Year 2010-2011</b>	<b>Year 2011-2012</b>
(1)	(2)	(3)	(4)	(5)
1.	Total value of work done			

## Bill of Quantity (B.O.Q.)

**Tender Name: Design, Development & Supply of SCROM 1.2 compliant Signalling CBT for Delhi Metro Rail Corporation Ltd., Delhi.**

S.No.	Description	Unit	Quantity	Rate/Unit (Rs.)	Amount (Rs.)
1	Design, Development, Supply, Integration with DMRC's LMS, Testing & Commissioning of CBTs enrich with Graphics, Video, Text, Animations (2D,3D), Audio, Photographs at DMRC Server System as per Technical Specification at Section V.	Hour	<b>75</b>		
2	Supply, Installation and commissioning of LCMS/LMS as per specifications	Number	<b>01</b>		
3	<b>Optional:</b> Annual Comprehensive maintenance charges after expiry of warranty period of two years	Year			

## SECTION – IV

### SPECIAL CONDITIONS OF CONTRACT

#### 1. GENERAL

1.1. Following Special Conditions of Contract shall supplement the General Conditions of Contract of DMRC with latest corrections. Where there is any conflict between the special conditions and general conditions of the Contract, the provisions those in the General Conditions shall prevail.

1.2. Any special conditions stated by the Tenderer(s) in the covering letter submitted along with the tender shall be deemed to be a part of the tender to such extent only as have explicitly been accepted by DMRC.

#### 2. NAME OF WORK

2.1. Design, Development, Supply, Testing, Commissioning, Integration with DMRC's LMS/LCMS and maintenance of SCROM 1.2 compliant E-Learning Modules on Signaling, Telecommunication and Automatic Fare Collection System  
and

Supply, Installation, Testing, Commissioning and maintenance of LCMS/LMS System for S&T.

#### 3. EXECUTIVE AUTHORITY INCHARGE OF THE WORK AND CLARIFICATIONS TO BE OBTAINED

3.1. Dy.General Manager/S&T/III/DMRC will be the Executive-in-charge of this work and in the day-to-day execution of the work any clarifications or instructions given by him shall be final and binding on the Tenderer.

3.2. Regarding alterations to the contents of the contract or any other matter connected with the contract, **Dy.General Manager/S&T/III, 6<sup>th</sup> Floor, Metro Bhawan, Fire Brigade Lane, New Delhi-110001**, will be the final authority and his decision shall be final and binding on the Tenderer.

3.3. GM/Finance, DMRC, Delhi will be the in-charge of payments etc., under this contract.

#### 4. SECURITY DEPOSIT ON ACCEPTANCE OF TENDER:

4.1. The total security deposit on acceptance of tender shall be **10%** of Contract Value.

4.2. The balance Security Deposit after adjusting EMD, will be recovered only from the running bills of the contract and no other mode of collection of Security Deposit such as BG, FD etc. shall be accepted.

4.3. The rate of recovery shall be at the rate of **10%** of the bill amount till the full Security Deposit is recovered.

4.4. The Security Deposit will be returned to the Tenderer without any interest on successful completion of work, as defined in these documents.

#### 5. PERFORMANCE GUARANTEE ON ACCEPTANCE OF TENDER

5.1. On acceptance of the offer, the Tenderer shall furnish a Performance Guarantee in form of an irrevocable Bank Guarantee amounting to **10%** of contract value as per Performa attached as 'Form-D' from an approved bank **within 10 days** from the date of receipt of the letter of acceptance and before execution of the Contract Agreement.

5.2. The Performance Guarantee in form of Bank Guarantee should be kept valid till expiry of WARRANTY or MAINTENANCE PERIOD whichever is later.

5.3. The Performance Guarantee will be released to the Tenderer after satisfactory completion of the work and Warranty/Maintenance Period is over.

5.4. The Performance Guarantee shall remain fully in force and effect during the entire period that would be taken from the Commencement of the Contract till the end of the Warranty Period.

5.5. As and when an amendment is issued to the Contract, the Tenderer shall **within 15 days** of the receipt, furnish to DMRC an amendment to the Performance Guarantee as per amendment in the contract.

## **6. DEVELOPMENT/PROJECT SITE**

The SCROM 1.2 compliant CBT shall be developed and installed at Signaling CBT Lab Yamuna Bank Depot of DMRC, Delhi.

## **7. WORK TO BE DONE BY DMRC**

- a). Making available Room within DMRC premises in good condition with 230volts A.C.power supply for development of CBT at DMRC..
- b) Making available DMRC personnel for inspection and joint testing and commissioning.
- c) Co-ordination with DMRC for photography/videography.
- d) Making available Subject Matter Expert (SME) who will provide all the necessary help to the Tenderer along with content material for developing CBT.

## **8. PROJECT IMPLEMENTATION METHODOLOGY**

8.1. CBT DEVELOPMENT: The CBT will be developed as per the Technical Specification (section V). The topics of the CBT shall be selected from the list available at Annexure – A as per DMRC's requirement. For each subject SME (Subject Matter Expert) will be provided by DMRC along with the Course contents. For approval of the content System Requirement Specification (SRS) & test specification will be drafted jointly by the Tenderer and DMRC.

8.2. After approval of the CBT, the same will be uploaded on DMRC server System by integrating with DMRC's LMS.

## **9. TEST PROCEDURE**

9.1. The Tenderer shall submit detailed test procedure for each Sub-Modules/Modules and system as a whole to DMRC. DMRC shall discuss with the Tenderer and modify the test procedure as may be required to ensure that the requirement of Tender specifications are complied. The finalised test procedure shall only act as a broad guideline and DMRC shall be free to carry out any other test that may be considered essential. The test procedure shall give details of all equipment, test and measuring instruments required to perform the tests, which shall be provided by the Tenderer free of cost.

9.2. DMRC shall have the right to put all the Sub-Modules/Modules/System forming part of the same or any part there to such tests as may think fit. The Tenderer shall not object on any ground whatsoever to the method of testing adopted by DMRC.

## **10. INSPECTION AND TESTS**

10.1. Inspection and tests shall be carried out at the place of development, destination or at site of installation by DMRC and / or its Authorized Representative (Inspecting Officer) to ensure that all the requirement of Tender specifications are complied during design, development, supply, integration with DMRC's LMS and commissioning. The Inspecting Officer shall be nominated by DMRC.

10.2. Notice / intimation shall be sent in writing at least 01 (one) week in advance by the Tenderer to the Inspecting Officer when the Sub Modules/Modules/System to be supplied is ready for inspection and test, and same shall not be delivered or dispatched until the Inspecting Officer has certified in writing that such system have been inspected and approved by him.

### **10.3. Facilities for Test and Examination**

The Tenderer shall, at his own expense afford to the Inspecting Officer all reasonable facilities as may be necessary for satisfying himself, that the system have been Developed in accordance with the particulars. The Inspecting Officer shall have full and free access at any time during the execution of the contract to the Tenderer's work for the development aforesaid, and he may require the Tenderer to make arrangements for inspection of the Sub-Modules/Modules/ System or any part thereof or any material at his premises or at any other

place specified by the Inspecting officer and if the Tenderer has been permitted to employ the services of a Sub-Tenderer, he shall in his contract with the Sub-Tenderer, reserve to the Inspecting officer a similar right.

#### 10.4. Cost of test

The Tenderer shall provide, at his cost, all materials, tools, labour and assistance of every kind, which the Inspecting officer may demand, of him for any test and examination, which he shall require to be made in the Tenderer's premises. If the Tenderer fails to comply with the conditions aforesaid, the Inspecting officer shall, in his sole judgment, be entitled to remove for test and examination all or any of the Sub-Modules/Modules/System developed by the Tenderer to any premises other than his (Tenderer's) and in all such cases, the Tenderer shall bear the cost of transport and/or carrying out such test elsewhere. A certificate in writing of the inspecting officer that the Tenderer has failed to provide the facilities and the means, for test examination shall be final.

#### 10.5. Delivery of stores for test

The Tenderer shall also provide and deliver for test, free of charge, at such place other than his premises as the Inspecting Officer may specify such material or stores he may require.

### **11. COMMISSIONING AND FINAL ACCEPTANCE TEST**

11.1. DMRC shall carry out all tests as per the technical specification and the acceptance test schedule to be furnished by the Tenderer. The test schedule furnished by the Tenderer will be modified by mutual discussion between the Tenderer and DMRC before finalization

Any Sub-Modules/Modules/System failing during the commissioning test shall be replaced/repared free of cost by the Tenderer.

11.2. All tests and measuring instruments and other arrangements required for final acceptance test shall be provided by the Tenderer free of cost.

11.3. The completion certificate shall only be issued by the Engineer nominated by DMRC after the integration with DMRC's LMS is satisfactorily commissioned.

### **12. FREIGHT AND INSURANCE**

12.1. The freight and insurance cost for the system to the site of work shall be borne by the Tenderer.

### **13. SUPPLY AND CUSTODY OF SYSTEM**

13.1. All materials related to system development and other services shall be supplied by the Tenderer to DMRC.

13.2. The transportation of these materials from DMRC to project site for integration with DMRC's LMS & commissioning shall also be the responsibility of the Tenderer.

### **14. RESPONSIBILITY OF THE TENDERER DURING IMPLEMENTATION OF PROJECT**

14.1. The Tenderer shall perform the contract in all respects in accordance with the terms and conditions thereof. The Sub-Modules/Modules/System and every constituent part thereof, whether in the possession or control of the Tenderer, his agents or servants or a carrier, or in the joint possession of the Tenderer, his agents or servants and DMRC, his agents or servants, shall remain in every respect at the risk of the Tenderer, until their actual delivery to DMRC at the stipulated place or destination or, where so provided in the acceptance of tender.

14.2. The Tenderer shall be responsible for all loss, destruction, damage or deterioration of Sub-Modules/Modules/System or to the from any cause whatsoever while the same after approval by the Inspecting Officer are awaiting dispatch or delivery or are in the course of transit from the Tenderer to the consignee or as the case may be interim consignee.

#### 14.3. DMRC's right of rejection

Notwithstanding any approval which the Inspecting Officer may have given in respect of the stores or any materials or other particulars or the work or workmanship involved in the performance of the contract (whether with or without any test carried out by the Tenderer or

the Inspecting Officer or under the direction of the Inspecting Officer) and notwithstanding delivery of the stores where so provided to the interim consignee, it shall be lawful for the consignee, on behalf of DMRC, to reject the stores or any part, portion or consignment thereof within a reasonable time after actual delivery thereof to him at the place or destination specified in the contract if such stores or part, portion or consignment thereof is not in all respects in conformity with the terms and conditions of the contract whether on account of any loss, deterioration or damage before dispatch or delivery or during transit or otherwise howsoever.

#### 14.4. Subletting and assignment

The Tenderer shall not, without the previous consent in writing of DMRC, sublet, transfer or assign the contract or any part thereof or interest therein or benefit or advantage thereof any manner whatsoever.

In the event of the Tenderer's subletting or assigning this contract or any part thereof without such permission, DMRC shall be entitled to cancel the contract and to purchase the system elsewhere on the Tenderer's account and risk and the Tenderer shall be liable for any loss or damage which DMRC may sustain in consequence or arising out of such purchase.

### **15. PATENT RIGHTS AND ROYALTIES**

15.1. The Tenderer shall defray the cost of all Royalties fees and other payments in respect of patents, patent rights and licenses which may be payable to patentee, licensor or other person or corporation and shall obtain all necessary licenses. In case of any breach (whether willfully or inadvertently) by the Tenderer on this provision, the Tenderer shall indemnify DMRC and their officers, servants, representatives against all claims, proceedings damages, cost charges, expenses, loss and liability which they or any of them may sustain, incur or be put to by reason or in consequence directly or indirectly of any such breach and against payment of any royalties, damages or other moneys which DMRC may have to make to any person or holder entitled to patent rights in respect of the users of any machine, instruments, process, Software, article, matter or thing, constructed, manufactured, supplied or delivered by the Tenderer or to his order under this contract.

### **16. FUTURE DEVELOPMENT**

16.1. The Tenderer shall supply to DMRC free of charge all data and specifications, which may result from developments, effected by him in the period of currency of contract. The DMRC reserves the right for such modified or improved versions in lieu of those originally quoted for, based on prices and other conditions mutually agreed upon.

### **17. HARDWARE & SOFTWARE FOR SYSTEM MAINTENANCE**

17.1. The Tenderer shall submit list of Hardware, Software & testing equipment and their quantities required for maintenance of the system for 02 (two) years.

### **18. QUALITY ASSURANCE**

18.1. The Tenderer shall submit along with the Tender the quality control plan including full details of in-house quality assurance organization , procedures and documentation. During the development process, proper record shall be maintained for the inspection and tests carried out according to this plan.

18.2. In the event of DMRC waiving off the inspection, all tests provided in the test schedules approved by DMRC shall be carried out by the Tenderer and proper record of all such tests and results thereof shall be maintained and supplied to DMRC on demand.

### **19. TRAINING**

19.1. The Tenderer shall undertake to train DMRC personnels nominated by DMRC in different aspects of System design, functioning, field integration with DMRC's LMS, testing, commissioning, operation, maintenance and repair, covering both hardware and software. Training should be comprehensive so as to impart full knowledge to DMRC personnels deputed for the training to independently execute the integration with DMRC's LMS, operation, maintenance and repair of system. The training courses should, apart from formal

classroom training, include hands on practical experience on working integration with DMRC's LMS. The Tenderer shall make all necessary arrangements for the same.

19.2. The Tenderer shall impart training in content development including storyboard & script writing, creating templates, interface designing, graphic designing, creating animations (2D & 3D), video editing, integration of voice over & synchronization and authoring.

19.3. The Tenderer shall impart training in various software used in development of CBT such as MS Project, ADOBE Photoshop, ADOBE Premier, MACROMEDIA FLASH, MAYA 3D MAX, MACROMEDIA Author weaver, MACROMEDIA Dream weaver, Sound Forge and any other software used.

## **20. COMPLETION PERIOD**

20.1. The entire work is required to be fully executed within 09(Nine) months from date of issue of letter of acceptance.

20.2. The Tenderer shall depute adequate no. of competent engineers/qualified staff to install, test and commission the System at site.

## **21. TIME SCHEDULE**

21.1. Time is the essence of the contract. The time schedule for the entire work is of utmost importance. Therefore the Tenderer shall submit a BAR/CPM/PERT chart showing detailed activities of the works by keeping the target date as within 09 (Nine) months from date of issue of letter of acceptance.

21.2. The works will be carried out as per the BAR/CPM/PERT Chart submitted by the Tenderer showing details of activities failing which the Tenderer is liable for action as per clause No.62 of the General Conditions of the contract.

21.3. The Tenderer shall furnish progress report every month to DMRC.

21.4. A coordination meeting shall be held every fortnight in the office of DGM/Signal/L1-2/DMRC to discuss the progress of work and programme for the next meeting.

## **22. TIME LIMITATION**

22.1. Subject to any requirement in the contract as to completion of any portion or portions of the work before completion of the whole, the Tenderer shall fully and finally complete the whole of the work comprised in the contract by the date entered in the contract, provided that if any modifications have been ordered which, in the opinion of the DMRC have materially increased the magnitude of the work, such extension of the contracted date of completion may be granted as shall appear to DMRC to be reasonable in the circumstances provided. Moreover the Tenderer shall be responsible for requesting such extension of the date as he may consider necessary as soon as a cause thereof shall and in any case not less than one month before expiry of the original date fixed for completion of the work.

## **23. DELAYS AND EXTENSION OF TIME.**

23.1. If the contract be delayed at any time in the progress of the work by any act of neglect of DMRC or by any other tenderer employed by DMRC or by strike, lockouts, fire, unusual delay in transportation, unavoidable casualties or any cause beyond the tenderer's control, or any delay authorized by DMRC decide to justify the time of completion of the work may be extended for such reasonable time as DMRC may decide.

## **24. EXTENSION OF TIME ON DMRC ACCOUNT**

24.1. In the event of any failure or delay by DMRC to handover to the Tenderer possession of the Room/ Equipments necessary for the execution of the works or to provide the necessary drawings or instructions of any other delay caused by DMRC due to any other cause whatsoever then such failure or delay shall in no way affect or vitiate the contract or alter the character or entitle the Tenderer to damage or compensation thereof but in any such case, DMRC may grant thereof such extension of the completion date as may be considered reasonable.

**25. FORCE MAJEURE**

25.1. If, at anytime during the continuance of the agreement, the performance in whole or in part by either party of any obligation under the agreement shall be prevented or delayed by reasons of any war, hostile acts of the enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes and lock-outs and any statute, statute rules, regulations, orders or requisitions issued by any Govt. Department or a competent authority or acts of God (hereinafter referred to as eventualities) then provided notice of the happening of any such eventuality is given by either party to the other within fifteen days from the date of occurrence thereon, neither party shall, by reason of such eventualities be entitled to terminate this contract agreement nor shall either party have any claim for damages against the other in respect of such non-performance or delay in performance.

Performance of the contract agreement shall, however be resumed as soon as practicable after such eventuality has come to an end or ceased to exist. Provided that, if performance in whole or part of any obligation under the contract agreement is delayed by means of any such eventuality for a period exceeding six months, either party may, at his option, terminate the contract agreement provided further that in the event of such prevention or delay as aforesaid, then, instead of exercising the option, both parties may consult with each other with a view of agreeing between them the action mutually to be taken in order to minimize the effects of such prevention or delay and continue the operation of this contract agreement.

**26. PRICE VARIATION CLAUSE**

Price variation clause is NOT applicable in this case.

**27. VARIATION IN QUANTITIES**

27.1. A variation of plus/minus 25% in the quantities required for execution of work over & above the quantities provided in the contract, necessitated by the reasonable changes in the scheme etc., shall be supplied at the rate of unit cost quoted in the Tender schedule.

27.2. If require further, the Tenderer shall bound to execute the additional quantities to the extent of (+50%) of the agreement value with the following terms and conditions:

- a) If agreement value goes beyond (+)25%, that case, for the first 15% increase in the value of the agreement, the rates shall be reduced by 2% in the incremental value.
- b) The rate shall be further reduced by 2% for the incremental value of agreement, for the next 10% increase in the value of the agreement beyond 15% as in (a)
- c) In case agreement value goes beyond (+) 50%, the rates for incremental value shall be decided as per prevailing codal provisions.

27.3. In the event of DMRC requiring any variation, notice shall be given to the Tenderer in reasonable time (one month) as to enable him to make arrangements accordingly.

**28. MAINTENANCE PERIOD**

28.1. After the CBT have been installed and commissioned, the Tenderer shall be responsible for proper maintenance & supervision of the CBT for a period of two year from the date of commissioning. For this purpose he shall prepare a maintenance plan and make available the services of maintenance engineers. During this period of maintenance supervision, if any lacuna is noticed in the functioning as a result of any defect in design or Development, the same will be rectified/ replaced by the Tenderer free of cost.

**29. WARRANTY**

29.1. The Tenderer shall warrant that everything to be furnished here under shall be free from defects and fault in design, development, workmanship and manufacture, and shall be of the highest grade and consistent with the established and generally accepted standards for system of the type ordered and in full conformity with the contract specifications and samples if any and shall if operatable, operate properly.

29.2. This warranty shall start from the date of commissioning and shall expire 2 years (24 months) after commissioning.

29.3. During the period of warranty, the Tenderer shall remain responsible to arrange replacement and for setting right at his own cost any equipment/module supplied by him which is of defective manufacture or design or becomes unworkable due to any cause whatsoever. The decision of the DMRC in this regard to direct the Tenderer to attend to any damage or defect in work shall be final and binding on the Tenderer.

29.4. If it becomes necessary for the Tenderer to replace or renew any defective portions of the CBTs under this clause, the provisions of this clause shall apply to the expiry of six months from the date of such replacement or renewal or until the end of the warranty period whichever may be later. If any defect is not remedied within reasonable time, DMRC may proceed to do the work at Tenderer's risk and expense, but without prejudice to any other rights which the Employer may have against the Tenderer in respect of such defects.

29.5. All inspections, replacements or renewals carried out by the Tenderer during the warranty period shall be subject to the same conditions of the contract.

29.6. All replacement and repairs and design change that DMRC shall call upon the Tenderer to deliver or perform under this warranty shall be delivered and performed by the Tenderer within one month, promptly and satisfactorily.

29.7. The decision of the DMRC in regard to Tenderer's liability and the amount if any payable under this warranty shall be final and conclusive.

29.8. Due to analysis of failures, if any design deficiency is pointed out by the DMRC, the Tenderer shall rectify it at his own cost.

### **30. MEASUREMENTS OF THE COMPLETED WORK FOR PAYMENT ACCEPTANCE:**

30.1. The unit for measurement of the work will be in terms of learning hours. The learning hours will have a relation to the number of slides which in turn will depend on the contents of those slides. The number of slides counted for hour will vary as under:

Based on the contents of the slides, they are divided into following categories:

**Level 0:** slides having only text or/and photographs with voiceover but with no animation. However these slides shall have all the standard buttons and their help tip or popping up information on mouse movement over them. The number of such slides to constitute one (1) learning hour shall be 60 (Sixty).

The typical quizzing slides containing text/photo as question with MCQ and all the standard template slides will be counted in this category.

**Level I:** slides having text/photographs or both with voiceover and minimum two dimensional (length and breadth) animations. By minimum two D animation it is meant that these slides shall have all the standard features of a slide and shall also have the features required of for controlling the running of animation like play, pause, stop, zoom, rewind/replay, scroll/status running bar etc.etc. The number of such slides to constitute one (1) learning hour shall be 40 (Forty). The slides containing recorded videos will be counted in this category.

**Level II:** slides requiring three dimensional (length, breadth and depth) modeling, imaging and animation with rich multimedia contents and controls and are essentially interactive in nature. By being interactive it is meant that they offer the user, a variety of activity on the slide itself, like choosing one of the actions and then display the outcome of that particular action. The standard controls related to running of animation/videos like play, pause, stop, zoom, rewind/replay, scroll/status running bar etc.etc. will not constitute the 'variety of activities'. The slides may lead the user to another slide containing more detailed view/description through an embedded hyperlink with facility to return back. In such case all the linked slides will be counted as one slide under this category. The number of such slides to constitute one (1) learning hour shall be 25 (Twenty Five).

The same slide(s) used repeatedly, either in same module or in different modules shall be counted only once for the purpose of learning hours count.

The number of MCQ slides that shall be counted constituting a learning hour shall be limited to the number of questions capable of being selected for one single assessment, irrespective of the total number of questions available. However to account for the work done in preparing these slides, a one is to two count shall be given for these slides which means, in addition to the number of slides that are taken for one single assessment, every two additional question slides will be counted as one slide for the purpose of payment. This shall be understood with the help of following example:

Let's say a total of hundred (100) MCQ slides are prepared for a particular module and the number of slides that are taken for one single assessment are twenty (20), then total slide count for the purpose for accounting for payment will be  $\{(20 + ((100-20)/2)) = (20+40) = 60 = 1 \text{ (one) learning hour}\}$ .

### **31. PAYMENT**

31.1. Payment will be made in Indian Rupees only subject to any deduction authorised by DMRC to make under any statutes or under the terms of contract that may be applicable while accepting the Tender. The Tenderer shall be entitled for payment as follows:

31.2. Design, Development, Supply, Testing, Commissioning, Integration with DMRC's LMS/LCMS and maintenance of SCROM 1.2 compliant E-Learning Modules on Signaling, Telecommunication and Automatic Fare Collection System and Supply, Installation, Testing, Commissioning and maintenance of LCMS/LMS System for S&T. 95% of the Accepted Schedule amount will be paid on Delivery, Integration with LMS, Testing & Commissioning of the developed CBT at DMRC, and Design, Development, Supply, Testing, Commissioning, Integration with DMRC's LMS/LCMS and maintenance of SCROM 1.2 compliant E-Learning Modules on Signaling, Telecommunication and Automatic Fare Collection System and Supply, Installation, Testing, Commissioning and maintenance of LCMS/LMS System for S&T. upon submission of Acceptance Test Report issued by DMRC.

31.3. Commissioning & Training Portion

5% of Accepted Schedule amount will be paid after 3 months of successful working of the CBT and LCMS/LMS.

31.4. All payment shall be made on issue of the Certificate by DMRC within a reasonable time of the submission of the necessary bills by the Tenderer.

31.5. The Tenderer shall be entitled to be paid from time to time by way of 'On account' payments only for such works as in the opinion of DMRC has executed in terms of the contract, provided that the work under each item is carried out to the specified standards. Subsequent 'ON ACCOUNT' payment shall be made appropriate to the progress of works. All payments due on DMRC or the DMRC's representative certificates of measurements shall be subject to any deductions which may be under these provisions.

31.6. 'On account' payments made to the Tenderer shall be without prejudice to the final making up of the accounts (except where measurements are specifically noted in the measurement book as 'final measurements and as such have been signed by the Tenderer) and shall in no respect be considered or used as if evidence of any particular quantity of work having been executed nor of the manner of its execution being satisfactory.

### **32. DEDUCTION OF INCOME TAX AT SOURCE:**

32.1. In terms of new section 194-C inserted by the Finance Act, 1972, in the Income Tax 1961, DMRC shall at the time of arranging payments to the Tenderer for carrying out any work under the contract be entitled to deduct Income Tax at source on income comprised in the sum of each payments.

32.2. The deductions towards Income Tax to be made at source from the payments due to nonresidents shall continue to be governed by Section 195 of I.T.Act, 1961.

**33. GENERAL**

33.1. Until the final certificate shall have been issued, the Tenderer or his duly authorized representatives, whose names shall have previously been communicated in writing to the Employer with permission from Employer shall be given right of entry at his own risk & expenses at all reasonable working hours upon all necessary parts of the works for the purpose of inspecting the working and the records of the system and taking notes there from and, if he desires at his own risk and expense making any tests subject to the approval of DMRC which shall not be unreasonably withheld.

**34. REFUND OF SECURITIES.**

34.1. The Security Deposit unless forfeited in whole or in part according to terms and conditions will be refunded on receipt of a certificate from the Engineer concerned to the effect that the work has been satisfactorily completed in all respects. Performance Bank guarantee shall be released after completion of guarantee/maintenance period and receipt of 'No claims' certificate from the Tenderer duly countersigned by the Engineer.

**35. SETTLEMENT OF DISPUTES.**

35.1. The provision of clauses 63 and 64 to the General conditions of Contact will be applicable only for settlement of claims or disputes between the parties for values less than or equal to 20% of the value of the contract, provision of Clauses 63 and 64 and other relevant clauses of the General conditions of contract will not be applicable and arbitration will not be a remedy for settlement of such disputes.

35.2. The Tenderer shall not be entitled to ask for arbitration before the completion of the work assigned to him under this contract. The Tenderer shall seek reference to arbitration to settle disputes only once within the ambit of condition 34.1 above.

35.3. Special Conditions vide paras 34.1 and 34.2 shall prevail over existing clauses 63 and 64 of the General Conditions of Contract other than provisions relating to 'Excepted Matters'.

35.4. In the event of any breach of the aforesaid conditions, the Tenderer shall, in addition to throwing himself open to action for contravention of terms of the agreement and/or for criminal breach of trust, be liable to account to the DMRC for all moneys, advantages or profits resulting or which in the usual course would have resulted by reason of such breach.

35.5. In the event of failure on the part of the Tenderer for maintaining the progress thoroughly/commensurate progress with reference to time limit given in contract, the DMRC reserves the right to terminate or to withdraw the whole balance work or part thereof at the discretion of the Engineer-in-charge and the entire balance work or part thereof be got it done by fixing any other agency even on single tender basis or by departmental means as decided by the Engineer-in-charge at the risk and cost of the Tenderer and the cost so incurred on this shall be to the Tenderer's account. The decision of the Engineer-in-charge in regard to the quantity to be so executed will be final and binding on the Tenderer and the amount incurred in excess of rate accepted under this contract will be recovered from the Tenderer.

**36. SITE FACILITIES**

36.1. DMRC will provide free access to the Tenderer/s workmen into the CBT development room in DMRC premises during the course of the execution of the work. In case the Tenderer/s workmen have to stay on the DMRC premises, necessary charges as ascertained by DMRC will be collected from the Tenderer for such stay.

**37. Confidentiality**

Tenderer should treat as confidential all information and material obtained from DMRC during development of the work and in subsequent communications with DMRC. None of the information obtained at any stage of work shall be duplicated, used for any other project, or disclosed without DMRC's prior written consent.

## **SECTION V**

# **TECHNICAL SPECIFICATION FOR DEVELOPMENT OF CBT & PROCUREMENT OF LMS/LCMS**

### **1. GENERAL**

1.1. Contents for the CBT system based on Computer based Animation / Graphics / Simulation, are to be designed and developed on various topics of Signaling systems which are being taught at DMRC for better understanding and retention. The Contents would cover the learning needs of trainees and also provide additional updated knowledge to all DMRC Personnel of S&T Department. The topics of the Contents shall be technology wise and shall not be course dependent. The Contents shall be categorized as:

- a) Primary Modules
- b) Equipment and System Modules
- c) General Modules
- d) Reference Modules

Each Category will be further divided in to sub category and the sub-category will have different modules. All the modules will have their codes for easy identification & application.

### **2. SCOPE**

2.1. This Specification covers the Functional, Design, Development Methodology and Performance requirements of CBT and LCMS/LMS.

### **3. FUNCTIONAL REQUIREMENTS**

3.1. The CONTENT shall be Multimedia rich with video, sound and animation to provide a very rich learning experience and use of animation and simulation has to be used extensively to explain the working of various circuits, equipments, devices, etc.

3.2. Concepts shall be explained through good and effective graphics, and animations based on imaginative analogies and components locally available, audio-visual clippings commonly identifiable.

3.3. The language of explanation of each module shall be lucid.

3.4. The interactive mode shall be used wherever applicable.

3.5. The CONTENT shall be customized for diverse groups of people and thereby shall be developed with a voice over in English.

3.6. The CONTENT shall be developed keeping in mind the flexibility and ease of modification and integration to other platforms whenever need arises.

3.7. The CONTENT shall be developed in such a manner so that the same can be integrated with DMRC's LMS.

### **4. DESIGN REQUIREMENTS**

4.1. The CBT shall have multimedia rich animations, video, voiceover, images, graphics, flow charts, block diagrams, drawings etc.

4.2. The CBT shall have Simulations facility.

4.3. The CBT shall have Assessment/ Quizzes facility.

4.4. The CBT shall have High interactivity with activity based learning modules.

4.5. The CBT shall have facility for Play, Pause, Forward, Rewind controls for videos and animations.

4.6. The CBT shall have Background music and sound effects.

4.7. The CBT shall have Details of Reference materials.

4.8. The CBT shall have Linkages and references for additional learning resources and areas as extension.

4.9. The CBT shall have facility for Bookmark, Notepad, Highlighter, Calculator wherever necessary & Glossary.

4.10. Interface:

The architecture and graphical user interface (GUI) shall be developed in Flash and shall be able to host video, sound and all the simulations / animations that are developed.

4.11. Template

All buttons on the template should have a tool tip.

4.12. Operating System

The CBT shall be compatible with WINDOWS 2000/ NT/ XP, Mac, Linux operating systems.

4.13. Browser

The CBT shall be browser based and compatible with majority of browser.

4.14. Screen Resolution

The CBT shall have screen resolution as 1024 X 768 pixels.

4.15. Navigation design

The design of CBT shall be open, clear and easy to navigate. The Home page and Contents page and surrounding 'skin' should be appropriate to the subject explained.

4.16. Standard Compliance

The CBT shall be SCORM 1.2 compliant.

4.17. Skill Requirement

The CBT shall be developed by using the following skills:

- a) Content Developers
- b) Instructional Designer
- c) Multimedia Team Leader
- d) Multimedia Module Leaders
- e) Multimedia Programmers
- f) 2D Animators
- g) 3D Animators
- h) Art Directors
- i) Sound Engineers
- j) Quality Testing team
- k) Software Developers

4.18. Software Support: For E Content Development, the following software may be used (Please note that **list is suggestive and not exhaustive**, any other similar software may be suggested for use and the same may be used only if approved by DMRC):

1	Project Management and Planning	MICROSOFT PROJECT
2	Story Boarding and Script writing	FRAME MAKER / MS WORD
3	Drawings, Illustrations, Graphs	COREL DRAW 11.0
4	Image, Photographs, Drawings Editing	ADOBE PHOTOSHOP
5	Video editing and Composition	ADOBE PREMIER
6	2D Animations	MACROMEDIA FLASH 8.0
7	3D Animations	MAYA 5.0 / 3DX MAX
8	Authoring	MACROMEDIA AUTHORWARE / DIRECTOR
9	Browser Based Authoring	MACROMEDIA DREAM WEAVER
10	Voice over & Back ground music and Audio Editing	SONY SOUND FORGE 6.0
11	Setup and integration with	DMRC's LMS INNO SETUP

## 5. DEVELOPMENT METHODOLOGY

5.1. The Content Development methodology shall follow ISO/SEI CMM Level 4 certified systems, procedures and processes.

5.2. All the deliverables shall be as per the standard mentioned in clause 5.1.

5.3. The Subject Matter Experts shall not only provide the entire source Contents including Existing Course Material and specifications required to develop the E- Content modules but also guide the Content development process.

5.4. While developing the Content, appropriate synchronization between the existing academic delivery model and the proposed CBT Content packages shall be ensured.

5.5. The E Content modules shall be developed in following phases:

- a) Pre production Phase
- b) Production Phase
- c) Post production Phase

5.6. **Pre-production Phase:** This will cover the following activities.

- a) Clients Requirement Analysis
- b) Planning of Course Content
- c) Preparation of Course Content Identification Document (CCID)
- d) Preparation of Detailed Content Designing Document (DCDD) i.e., Story Board & Script
- e) Quality Check (QC) of Story Board & Script
  - i. QC by Domain Expert
  - ii. QC by Multimedia Expert
- f) Approval of Story Board & Script

5.7. **Production Phase:** This will cover the following activities.

- a) Creating Templates and Interface Designing
- b) Sourcing of Resources required for development of Content
- c) Graphic designing
- d) Creating Animations (2D & 3D)
- e) Integration of Text & Graphics / Animations
- f) Video Recording & Editing
- g) Voiceover Recording
- h) Sound Engineering
- i) Integration of Voice-over and synchronization
- j) Overall Integration
- k) Unit wise Authoring
- l) Multi-platform Compatibility
- m) Quality Assurance
- n) Approval
- o) Sign Off

5.8. **Post Production Phase:** In this phase, quality checks will be carried out for the Contents developed and as per the requirements accepted as per clause 5.6.

5.9. **Project Collaboration Server (PCS):** A project collaboration server shall be provided for managing daily interactions with the Content evaluation panel to review activities, production and scope changes. It provides a transparent window to review everyday production and serves as a communication portal between the Developer and Accepting Authority

## 6. PERFORMANCE REQUIREMENT

### 6.1. Acceptance of Quality

Prior to start the project the norms for acceptance will be mutually agreed upon between the Developer & Accepting Authority. Based on these norms, the Quality Checks will be carried out and shall be approved the Deliverables.

### 6.2. Submission of Deliverables

The Contents developed & Accepted as per clause 6.1 will be submitted in CDs mentioning the Version Number and date of release.

## 7. LEARNING MANAGEMENT SYSTEM (LMS)/LEARNING CONTENT MANAGEMENT SYSTEM (LCMS)

### 7.1 General

S&T/O&M/DMRC seek to purchase an integrated Learning Management System (LMS)/Learning Content Management System (LCMS) to incorporate into its training system to be able to offer 'state of the art' learning solutions to all its trainees.

The purpose of this project is to provide advanced distributed learning (anytime and anywhere) through a blended learning experience for trainees and all other staff. The goal is to have the following components in the proposed LMS/LCMS:

- Learner management functions (registration, tracking, monitoring, reporting, wait-lists, auto E-mail notification)
- Content management functions (develop, store, reuse, manage and deliver training content from a central repository)
- Course authoring functionality
- Virtual classroom delivery capability for real time instruction
- The ability to issue, store, and track certifications and attendance at education and training both internal and external to training classroom.
- Needs assessment and survey capability

### Detailed Specifications of LMS/LCMS

1 APPLICATION SPECIFICATIONS	STATUS	COMMENTS
<b>1.1 The system shall have various registration capabilities including but not limiting to:</b>		
• The system shall manage the registration process to include self service, manager/administrator initiated, etc.		
• Describe the registration support for individual and batch.		
• The system shall have browse capability in the registration process.		
• The system shall have the ability to set or configure course registration restrictions and approval including manger approval.		
• The system shall have online registration for all education programs including classroom based		
<b>1.2 Vendor shall describe class management functions to include:</b>		
• Notification to manager if employee does not enroll in required scheduled courses by a certain date.		
• Other customizable notification and registration capability, e.g. no show notification, reminders, etc.		

<ul style="list-style-type: none"> <li>• Automatic emailing to participants and managers of course registration and acceptance</li> </ul>		
<b>1.3 The system shall have the ability for managing the learning activities including but not limiting to:</b>		
<ul style="list-style-type: none"> <li>• General curriculam development capabilities.</li> </ul>		
<ul style="list-style-type: none"> <li>• Catalogue organization of learning activities including short abstract.</li> </ul>		
<ul style="list-style-type: none"> <li>• Search capabilities for courses, materials, enrollments &amp; accounts.</li> </ul>		
<ul style="list-style-type: none"> <li>• Defining &amp; enforcing prerequisites.</li> </ul>		
<ul style="list-style-type: none"> <li>• Challenge all or part of course through testing.</li> </ul>		
<ul style="list-style-type: none"> <li>• Support for evaluation of learning activities.</li> </ul>		
<ul style="list-style-type: none"> <li>• Student profiles, transcripts, and activities tracking.</li> </ul>		
<ul style="list-style-type: none"> <li>• Customized course catalogue for different user groups.</li> </ul>		
<ul style="list-style-type: none"> <li>• Pre, post tests automatically graded, tracked and monitored.</li> </ul>		
<b>1.4 The system shall have the ability to manage resources to include:</b>		
<ul style="list-style-type: none"> <li>• Tracking learning activity resources.</li> </ul>		
<ul style="list-style-type: none"> <li>• Manages course capacity.</li> </ul>		
<ul style="list-style-type: none"> <li>• Detect resource conflicts.</li> </ul>		
<ul style="list-style-type: none"> <li>• Tracks resources by usage, program cost, individual student costs, internal cost center tracking, etc.</li> </ul>		
<ul style="list-style-type: none"> <li>• Allocate individual and pooled resources within set parameters.</li> </ul>		
<ul style="list-style-type: none"> <li>• Maintain list of qualified instructors, including skill, availability, location, ranking.</li> </ul>		
<ul style="list-style-type: none"> <li>• Regional scheduling of rooms/instructors/resources.</li> </ul>		
<ul style="list-style-type: none"> <li>• Asynchronous scheduled learning on discontinuous days.</li> </ul>		
<b>1.5 The system shall have the ability to track, monitor and report competency, skills development, and gaps to include:</b>		
<ul style="list-style-type: none"> <li>• Flexibility for defining skills/competencies by employee group.</li> </ul>		
<ul style="list-style-type: none"> <li>• Importing job and competency profiles.</li> </ul>		
<ul style="list-style-type: none"> <li>• Self assessment of skills inventory.</li> </ul>		
<ul style="list-style-type: none"> <li>• Skills gap analysis.</li> </ul>		
<ul style="list-style-type: none"> <li>• Personalized learning plans including both required and recommended activities.</li> </ul>		
<ul style="list-style-type: none"> <li>• Skills inventory development and mapping.</li> </ul>		
<b>1.6 The system shall have the ability to collaborate on learning opportunities to include:</b>		
<ul style="list-style-type: none"> <li>• Support off-the-shelf and custom developed learning activities.</li> </ul>		
<ul style="list-style-type: none"> <li>• Integrates with other technologies, such as threaded discussion, shared whiteboard, instant messaging, bulletin boards, streaming video web casts.</li> </ul>		
<ul style="list-style-type: none"> <li>• Integrates with live interactive (virtual classroom) technologies such as videoconferencing.</li> </ul>		
<b>1.7 The system shall provide administration and reporting capabilities.</b>		
<ul style="list-style-type: none"> <li>• Administrative interface and usability, e.g. stats, SPECIFICATIONS STATUS COMMENTS utilization, summaries</li> </ul>		
<ul style="list-style-type: none"> <li>• Standard reporting capabilities</li> </ul>		

• Flexibility in developing custom reports		
• Default roles/permissions provided		
• Event management capabilities with automatic email notification		
• Customize (compartment) users access based on group, e.g. management development		
• Secure access to learning activities via distance		
• Printing options for teaching materials for classroom-based training		
<b>1.8 The system shall include content management functionality to include:</b>		
• Content development process and support		
• Authoring tools, integrating ability for off-shelf programs, templates		
• Re-useable components		
• Separation of content development from program delivery		
• Capacity to store, retrieve multimedia such as audio, video, etc		
• Facilitate adaptive/personalized learning experiences based on learner needs		
• Creating/modifying online tests and evaluations		
• Administering needs assessments and evaluations		
• Assessment settings and options		
• Bookmark course and continue later		
• Securing assessment information		
• Server performance capabilities		
• CD-ROM, CD-web based courseware		
• Track and report student's interactivity with the courses		
• Ability to download courses		
• Packaging for mobile download		
<b>1.9 The vendor shall outline the support and training options including:</b>		
• Technical support options		
• Standard response times and resolution procedures		
• Major revisions and release schedule		
• Maintenance policy re software modifications and upgrades		
• Provisions for problem solving and enhancements in contract		
• End of life procedures including notification and timing		
• Availability of training		
• Online Glossary of terms		
• Online Frequently Asked Questions (FAQ)		
• Online Tutorial		
• Training requirements/recommendations and cost		
• Service arrangements		
<b>1.10 The vendor shall provide a typical Implementation schedule to include:</b>		
• Implementation process and methodology		
• Process of change requests		
• Tracking and communication of issues and changes		
• Critical success factors for implementation		
• Implementation resources provided		
• Roles and responsibilities in the implementation described		

• Support services for courseware development		
• Support services for deployment		
• Competencies required for implementing customized programs		
• Typical implementation framework		
• System installation timeframe		
• Characterize time to value, e.g. breakeven, ROI		
• Intranet deployment considerations		
• Hosting solutions offered		
• Strategy to secure access to hosting		

## LIST OF MODULES TO BE DEVELOPED

## I. Signaling

CATEGORY NO	MAIN CATEGORY	SUB-CATEGORY-1	SUB-CATEGORY-2	S.NO	MODULE
S	OUTDOOR SIGNALLING	POINT MACHINE	ALSTOM	1	POINT MACHINE GENERAL
				2	POINT MACHINE MJ-81
				3	POINT MACHINE MD-2000
			SIEMENS	4	SIEMENS POINT MACHINE S700K
		SIGNALS	ALSTOM	5	SIGNALS ALSTOM
			SIEMENS	6	SIGNALS SIEMENS
		AUDIO FREQUENCY TRACK CIRCUIT	ALSTOM/ SIEMENS	7	AFTC GENERAL OVERVIEW
			ALSTOM	8	SDTC FUNCTIONING AND TUNING
			SIEMENS	9	FTGS FUNCTIONING AND TUNING
	INDOOR SIGNALLING	COMPUTER BASED INTERLOCKING	ALSTOM/ SIEMENS	10	CBI OVERVIEW
				11	CBI INTERFACES
			ALSTOM	12	ASCV ARCHITECTURE FUNCTIONING & SDM
			SIEMENS	13	SICAS ARCHITECTURE & FUNCTIONING
		POWER SUPPLY SYSTEM	ALSTOM/ SIEMENS	14	BATTERIES GENERAL
				15	BATTERIES VRLA & BATTERY BANK
				16	THE POWER SUPPLY COMPONENTS: SMPS, TRFs, CBs,
				17	THE UPS SYSTEM ARRANGEMENT
			ALSTOM/ SIEMENS	18	BASIC TROUBLESHOOTING IN PS SYSTEM
			ALSTOM	19	ALSTOM PDC AND IDB RACK ARRANGEMENT
			SIEMENS	20	SIEMENS PDC RACK ARRANGEMENT

## II. Telecommunication

Category No.	System	S. No	Module Name	
T	ABSI	1	EPABX System (ABSI)	
	Alcatel	2	SDH & Access Mux system (Alcatel)	
	Fibcom	3	SDH & Access Mux system (Fibcom)	
	Motorola		4	Radio System –MSO (Motorola)
			5	Radio System EBTS/MTS (Motorola)
			6	Radio System –RCW, TRCP, RCH, Zetron & hand portables
	Sagem	7	SDH & Access Mux system (Sagem)	
	Samsung		8	AFC gate (Samsung)
			9	Ticket Office Machine (Samsung)
	Siemens		10	PIDS/PAS system overview (Siemens)
			11	EPABX System (Siemens)
	Thales		12	PIDS/PAS system overview (Thales)
			13	AFC gate (Thales)
			14	Ticket Office Machine (Thales)
			15	PIDS/PAS system Interfaces
			16	Central Computer- Overview and functionality
			17	Station computer – overview and functionality
			18	Business Rules

**III. Automatic Fare Collection**

Category No.	System	S. No	Module Name	
A	Samsung	1	Central System- Overview and functionality	
		2	Station computer – overview and functionality	
		3	AFC gate	
		4	Ticket Office Machine	
		5	Ticket Vending Machine	
		6	Ticket Reader and Portable Ticket Decoder	
	Thales	7	Central System- Overview and functionality	
		8	Station computer – overview and functionality	
		9	AFC gate SYS-4, 3SO2/BS21 & Additional Gate	
		10	Ticket Office Machine	
		11	Ticket Vending Machine	
		12	Ticket Reader and Portable Ticket Decoder	
			13	Business Rules
			14	AFC networking & its components
			15	Fare media and fare Products