



**DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF TRANSPORT & CIVIL AVIATION**

SRI LANKA RAILWAYS

**COLOMBO SUBURBAN RAILWAY EFFICIENCY IMPROVEMENT
PROJECT**

**FUNDED BY
ASIAN DEVELOPMENT BANK
ADB LOAN NOSRI P49111-005**

BIDDING DOCUMENTS

**PROCUREMENT OF
SMART TICKETING AND SEAT RESERVATION SYSTEM
FOR SRI LANKA RAILWAYS**

CONTRACT PACKAGE: CSREIP/ADB/ICB/IT/02

September 2018

DO NOT COPY



**DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF TRANSPORT & CIVIL AVIATION / SRI LANKA RAILWAYS
COLOMBO SUBURBAN RAILWAY EFFICIENCY IMPROVEMENT PROJECT**

INVITATION FOR BIDS

Date: 12 September 2018
Loan No. and Title: ADB Loan No SRI P49111-005
Contract No. and Title: CSREIP/ADB/ICB/IT/02
Procurement of Smart Ticketing and Seat Reservation System for Sri Lanka Railways

Deadline for Submission of Bids: 30 October 2018

1. The Democratic Socialist Republic of Sri Lanka has applied for a loan from the Asian Development Bank (ADB) towards the cost of the Colombo Suburban Railway Efficiency Improvement Project (CSREIP). A portion of this loan will be applied for eligible payments under the contract named above.
2. The Ministry of Transport and Civil Aviation/Sri Lanka Railways ("the Employer") now invites sealed bids from eligible bidders for the following package.

IFB No.	Contract Title	Location	Duration Months
CSREIP/ADB/ICB/IT/02	Procurement of Smart Ticketing and Seat Reservation System for Sri Lanka Railways	Sri Lanka	36

3. The International Competitive Bidding will be conducted in accordance with ADB's IT Procurement, Two-Stage: Two-Envelope Bidding Procedure with post Qualifications. (Ref. ADB Procurement Guideline 2.6)
4. Eligible bidders must meet the following criteria:
 - a. Pending Litigation shall not represent more than 50% of the bidder's net worth.
 - b. The bidders' net worth within last 3 years shall be positive.
 - c. Average annual turnover (AAT) within last 3 years, financial resources, similar contract experience within last 5 years & experience in key activities as given in the table below.

AAT US\$ (Million)	Financial Resources US\$ (Million)	Similar contract Experience	Contract Experience in Key Activities
12	As stated in Section 3, of Bidding Documents 2 Million USD	Participation as contractor, management contractor, or subcontractor, in at least 2 contracts within the last 5 years each with a value of at least 12 Million USD that have been successfully and substantially completed and that are similar to the proposed Railway Smart Ticketing and Seat Reservation System Products, Software and /or	key activities in Railway Ticketing and Seat Reservation System: <ul style="list-style-type: none">· Mobile Application Development· Installation & Commissioning· Maintenance Support Services For the above or other contracts executed during the period stipulated in 2.4.2 (a) , shall consist of <ul style="list-style-type: none">· Railway Station ticket issuance (counter and ticket vending machines)· Railway Seat Reservation System· Railway Mobile Ticketing· Railway Web based ticket issuance

	Services.	- Integration of payment gateways (Credit Card, Mobile Money, Pay as You Go, Mobile Banking)
--	-----------	--

5. To obtain further information and inspect the bidding documents, eligible bidders should contact:

Project Director
Project Management Unit
Colombo Suburban Railway Project (CSRP)
No 217, Cotta Road
Colombo 08
Sri Lanka

Telephone: 0094-112674354

Facsimile: 0094-112674354

E-mail: pd@csrp.lk or palitha.rail@yahoo.com

6. To purchase the bidding documents in (English) eligible bidders should;

- (i) Write to address above requesting for the bidding documents for the Contract Package No. CSREIP/ADB/ICB/IT/02
- (i) Pay a non-refundable fee of Sri Lankan Rupees (SLR) 80,000.00 or US \$ 500.00 (Including VAT) or by cash or bank draft in favour of the **“Secretary of Ministry of Transport and Civil Aviation, Transport Project Preparatory Facility, Bank of Ceylon Account Number 0007040316”** in respect of the bidding document.
- (ii) The bidding documents will be issued during normal working days from 9.00 hrs to 15.00 hrs at the address under 5 above, from **12 September 2018 till 29 October 2018**

7. Bidders should deliver:

- (i) Their bids to the address below **on or before the dead line: 14:00 hrs local time on 30 October 2018.**

The Chairman
Standing Cabinet Appointed Procurement Committee
C/o: Director- Procurement
Ministry of Transport & Civil Aviation
7th Floor, Sethsiripaya Stage II,
Battaramulla,
Sri Lanka.

- (i) Together with a Bid Security in the amount as specified in the Bidding Documents. For the purpose of determining the equivalent amount of the required Bid Security in a freely convertible currency, the selling exchange rate published by the Central Bank of Sri Lanka prevailing on the date 28 days prior to the deadline for Bid submission shall be applied.

The Technical Bids will be opened immediately after the deadline, in the presence of bidders' representatives who choose to attend.

A pre-bid meeting is arranged on **03 October 2018 at 10.00 hrs.** at the Auditorium, 7th Floor, Ministry of transport and Civil Aviation, Sethsiripaya – Stage II, Battaramulla, Sri Lanka. Interested bidders may attend the pre-bid meeting at their own expenses.

The bidder shall bear all costs associated with the preparation and submission of its Bids, and the Employer shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

The Chairman
Standing Cabinet Appointed Procurement Committee
C/o: Director- Procurement
Ministry of Transport & Civil Aviation
7th Floor, Sethsiripaya Stage II,

Battaramulla,
Sri Lanka
12.09.2018

DO NOT COPY

PART 1 – Bidding Procedures

DO NOT COPY

A. OPTION B: Two Stage Two Envelope Bidding

Section I. Instructions to Bidders

Table of Contents

A.	GENERAL	5
1.	Scope of Bid	5
2.	Source of Funds	5
3.	Corrupt Practices	5
4.	Eligible Bidders	6
5.	Eligible Smart Ticketing and Seat Reservation System and/or Services	7
6.	Intellectual Property	8
7.	Status of Sub-contractors	8
8.	Contacting the Employer	9
B.	CONTENTS OF BIDDING DOCUMENT	9
9.	Sections of Bidding Document	9
10.	Clarification of Bidding Document, Site Visit, Pre-Bid Meeting	9
11.	Amendment of Bidding Document	10
12.	Cost of Bidding	11
13.	Language of Bid	11
C-1.	FIRST STAGE BID PREPARATION	11
14.	Documents Comprising the First Stage Bid	11
15.	Letters of First Stage Bid, Attachments and Schedules	12
16.	Alternative Bids	12
17.	Documents Establishing the Eligibility of the Smart Ticketing and Seat Reservation System and/or Services	12
18.	Documents Establishing the Eligibility and Qualifications of the Bidder	12
19.	Documents Establishing Conformity of the Smart Ticketing and Seat Reservation System and/or Services	12
20.	Technical Proposal, Subcontractors	13
21.	Bid Prices	14
22.	Currencies and Payments	16
23.	Period of Validity of Bids	16
24.	Bid Security	16
25.	Format and Signing of Bids	17
C-2.	FIRST STAGE BID SUBMISSION AND OPENING	18
26.	Submission, Sealing and Marking of Bids	18
27.	Deadline for Submission of First Stage Bids	19
28.	Late Bids	19
29.	Substitution, and Modification of First Stage Bids	19
30.	Opening of First Stage Bids by Employer	19
C-3.	FIRST STAGE BID EVALUATION	20
31.	Confidentiality	20
32.	Deviations, Reservations, and Omissions	21
33.	Determination of Responsiveness of First Stage Bids	21

34.	Technical Evaluation of First Stage Bids	21
35.	Eligibility and Qualification of the Bidder	22
D.	CLARIFICATION OF FIRST STAGE BIDS	22
36.	Clarification Procedures	22
37.	Invitation to Submit Second Stage Bids	23
E-1.	SECOND STAGE BID PREPARATION	24
38.	Documents Comprising the Second Stage Bid	24
E-2.	SECOND STAGE BID SUBMISSION AND OPENING	24
39.	Submission, Sealing and Marking of Second Stage Bids	25
40.	Deadline for Submission of Second Stage Bids	25
41.	Late Bids	25
42.	Withdrawal, Substitution, and Modification of Second Stage Bids	25
43.	Second Stage Bid Opening	26
E-3.	SECOND STAGE BID EVALUATION AND COMPARISON	27
44.	Clarification of Second Stage Bids	27
45.	Deviations, Reservations, and Omissions	27
46.	Determination of Responsiveness	27
47.	Nonmaterial Nonconformities	28
48.	Correction of Arithmetical Errors	28
49.	Conversion to Single Currency	29
50.	Margin of Preference	29
51.	Second-Stage Examination of Bids	29
52.	Second Stage Evaluation of Bids	29
53.	Comparison of Bids	33
54.	Eligibility and Qualification of the Bidder	34
55.	Employer's Right to Accept Any Bid, and to Reject Any or All Bids	34
F.	AWARD OF CONTRACT	34
56.	Employer's Right to Vary Quantities at Time of Award	34
57.	Award Criteria	35
58.	Notification of Award	35
59.	Signing of Contract	35
60.	Performance Security	36
61.	Adjudicator	36

Section I. Instructions to Bidders

A. General

<p>1. Scope of Bid</p>	<p>1.1 In connection with the Invitation for Bids indicated in the Bid Data Sheet (BDS), the Employer, as indicated in the BDS, issues this Bidding Document for the procurement of Smart Ticketing and Seat Reservation System and/or Services as specified in Section 6 (Schedule of Requirements). The name, identification, and number of lots (contracts) of the International Competitive Bidding (ICB) are provided in the BDS.</p>
	<p>1.2 Unless otherwise stated, throughout this Bidding Document definitions and interpretations shall be as prescribed in Section 7(General Conditions) (GC).</p>
<p>2. Source of Funds</p>	<p>2.1 The Borrower or Recipient (hereinafter called "Borrower") indicated in the BDS has applied for or received financing (hereinafter called "funds") from the Asian Development Bank (hereinafter called "ADB") toward the cost of the project named in the BDS. The Borrower intends to apply a portion of the funds to eligible payments under the contract(s) for which this Bidding Document is issued.</p>
	<p>2.2 Payments by ADB will be made only at the request of the Borrower and upon approval by ADB in accordance with the terms and conditions of the financing agreement between the Borrower and ADB(hereinafter called the Loan Agreement), and will be subject in all respects to the terms and conditions of that Loan Agreement. No party other than the Borrower shall derive any rights from the Loan Agreement or have any claim to the funds.</p>
<p>3. Corrupt Practices</p>	<p>3.1 ADB's Anticorruption Policy requires borrowers (including beneficiaries of ADB-financed activity), as well as bidders, suppliers, and contractors under ADB-financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, the ADB:</p> <ul style="list-style-type: none"> (a) defines, for the purposes of this provision, the terms set forth below as follows: <ul style="list-style-type: none"> (i) "corrupt practice" means the offering, giving receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any party in the procurement process or the execution of a contract; (ii) "fraudulent practice" means a misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract; (iii) "collusive practices" means a scheme or arrangement between two or more bidders, with or without the knowledge of the Borrower, designed to influence the action of any party in a procurement process or the execution of a contract;

	<p>(iv) “coercive practices” means harming or threatening to harm, directly or indirectly, persons, or their property to influence their participation in a procurement process, or affect the execution of a contract;</p> <p>(b) will reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract; and</p> <p>(c) will sanction a party or its successor, including declaring ineligible, either indefinitely or for a stated period of time, to participate in ADB-financed activities if it at any time determines that the firm has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for, or in executing, an ADB-financed contract.</p>
	<p>3.2 Furthermore, Bidders shall be aware of the provision stated in the General Conditions (GC 47.1, Termination for Contractor’s Default).</p>
4. Eligible Bidders	<p>4.1 A Bidder may be a private entity or a government-owned entity—subject to ITB 4.5—or any combination of such entities with the intent to enter into an agreement supported by a letter of intent or under an existing agreement in the form of a joint venture, consortium or association (JV). In the case of a JV:</p> <p>(a) all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms, and</p> <p>(b) the JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the partners of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution.</p>
	<p>4.2 A Bidder, and all partners constituting the Bidder, shall have a nationality of an eligible country, in accordance with Section 5(Eligible Countries). A Bidder shall be deemed to have the nationality of a country if the Bidder is a national or is constituted, incorporated, or registered and operates in conformity with the provisions of the laws of that country. This criterion shall also apply to the determination of the nationality of proposed Sub-Contractors or suppliers for any part of the Contract including related services.</p>
	<p>4.3 ADB considers a conflict of interest to be a situation in which a party has interests that could improperly influence that party’s performance of official duties or responsibilities, contractual obligations, or compliance with applicable laws and regulations, and that such conflict of interest may contribute to or constitute a prohibited practice under ADB’s Anticorruption Policy. In pursuance of ADB’s Anticorruption Policy’s requirement that Borrowers (including beneficiaries of Bank-financed activity), as well as bidders, suppliers, and contractors under Bank-financed contracts, observe the highest standard of ethics. ADB will take appropriate actions, which include not financing of the contract, if it determines that a conflict of interest has flawed the integrity of any procurement process. Consequently, all Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to</p>

	<p>be in a conflict of interest with one or more parties in this bidding process if, including but not limited to:</p> <ul style="list-style-type: none"> (a) they have controlling partners in common; or (b) they receive or have received any direct or indirect subsidy from any of them; or (c) they have the same legal representative for purposes of this bid; or (d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or (e) a Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which it is involved. However, this does not limit the inclusion of the same subcontractor, not otherwise participating as a Bidder, in more than one bid; or (f) a Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the Smart Ticketing and Seat Reservation System and/or Services that are the subject of the bid.
	<p>4.4 A firm shall not be eligible to participate in any procurement activities under an ADB-financed or ADB-supported project while under sanction by ADB pursuant to its Anticorruption Policy (see ITB 3), whether such sanction was directly imposed by ADB, or imposed by ADB pursuant to the Agreement for Mutual Enforcement of Debarment Decisions. A bid from a sanctioned or cross-debarred firm will be rejected.</p>
	<p>4.5 Government-owned entities in the Borrower's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under the principles of commercial law, and (iii) are not dependent agencies of the Employer or the Borrower.</p>
	<p>4.6 Bidders shall provide such evidence of their continued eligibility satisfactory to the Employer, as the Employer shall reasonably request.</p>
	<p>4.7 In case a prequalification process has been conducted prior to the bidding process, this bidding is open only to prequalified Bidders.</p>
	<p>4.8 Firms shall be excluded if by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's country prohibits any import of goods or contracting of works or services from that country or any payments to persons or entities in that country.</p>
<p>5. Eligible Smart Ticketing and Seat Reservation System and/or Services</p>	<p>5.1 For the purposes of these Bidding Documents, the Smart Ticketing and Seat Reservation System and/or Services means all:</p> <ul style="list-style-type: none"> (a) the required information technologies, including all information processing and communications-related hardware, software, supplies, and consumable items that the Bidder is required to supply and install under the Contract, plus all associated documentation, and all other materials and products to be

	<p>supplied, installed, integrated, and made operational (collectively called “the products” in some clauses of the ITB); and</p> <p>(b) the related software development, transportation, insurance, installation, customization, integration, commissioning, training, technical support, maintenance, repair, and other Services necessary for proper operation of the products to be provided by the selected Bidder and as specified in the Contract.</p>
	<p>5.2 The Smart Ticketing and Seat Reservation System and/or Services to be supplied under the Contract shall have their origin in eligible source countries as defined in ITB 4.2 above and all expenditures under the Contract will be limited to such Smart Ticketing and Seat Reservation System and/or Services.</p>
	<p>5.3 For the purposes of ITB 5.2 above “origin” means the place where through software development, manufacturing, or substantial and major assembly or integration of components, a commercially recognized Product results that is substantially different in basic characteristics or in purpose or utility from its components.</p>
<p>6. Intellectual Property</p>	<p>6.1 By signing the Bid Submission Form, the Bidder represents that it either is the owner of the Intellectual Property Rights in the Products and/or Services offered, or that it has proper authorization and/or license to offer them from the owner of such rights. Willful misrepresentation of these facts shall be considered fraudulent practice subject to the provisions of ITB 3.1 through 3.2 above, without prejudice of other remedies that the Employer may take.</p>
<p>7. Status of Sub-contractors</p>	<p>7.1 If it is allowed in the BDS for Sub-Contractors to be nominated for certain components to be taken into account in assessing the Bidder’s overall qualifications, any Sub-Contractor so nominated by any Bidder is automatically disqualified from being a Bidder itself or a partner in a Joint Venture. Non-compliance may result in the rejection of all bids in which the affected firm participates as Bidder or as partner in a Joint Venture.</p> <p>7.2 Any firm not participating as bidder or as partner in a Joint Venture may be proposed as a Sub-Contractor in any number of bids.</p> <p>7.3 If a Bidder intends to subcontract major items of Products and/or Services, it shall include in the bid details of the name and nationality of the proposed Sub-Contractor, including vendors for each of those items and shall be responsible for ensuring that any Sub-Contractor proposed complies with the requirements of ITB 3 and Section 5 (Eligible Countries).</p> <p>7.4 Bidders are free to list more than one Sub-Contractor against each item. Quoted rates and prices will be deemed to apply, whichever Sub-Contractor is appointed, and no adjustment of the rates or prices will be permitted. The Employer reserves the right to delete any proposed Sub-Contractor from the list. This shall be done prior to Contract signature, by deleting such unacceptable Sub-Contractors from Appendix 3 of Section 9 (Contract Forms), which shall list the approved Sub-Contractors for each item prior to Contract signature. Subsequent</p>

	<p>additions and deletions from the list of approved Sub-Contractors shall be performed in accordance with GC Clause 20.</p> <p>7.5 The Employer, where applicable, may select only some of the listed Sub-Contractors in evaluating a bid. The criteria for selection will be set out in the BDS.</p>
8. Contacting the Employer	<p>8.1 From the time of bid advertisement to the time of Contract award, if any Bidder wishes to contact the Employer (or designated Project Manager) on any matter related to the bid, it should do so in writing. Failure to do so may result in rejection of its bid.</p> <p>8.2 If a Bidder tries to directly influence the Employer or otherwise interfere in the bid submission and evaluation process and the Contract award decision, its bid may be rejected.</p>
B. Contents of Bidding Document	
9. Sections of Bidding Document	<p>9.1 The Bidding Document consists of Parts 1, 2, and 3, which include all the Sections indicated below, and should be read in conjunction with any Addenda issued in accordance with ITB 11.</p> <p>PART 1 Bidding Procedures Section 1. Instructions to Bidders (ITB) Section 2. Bid Data Sheet (BDS) Section 3. Evaluation and Qualification Criteria Section 4. Bidding Forms Section 5. Eligible Countries</p> <p>PART 2 Requirements Section 6. Schedule of Requirements</p> <p>PART 3 Conditions of Contract and Contract Forms Section 7. General Conditions (GC) Section 8. Particular Conditions (PC) Section 9. Contract Forms</p>
	9.2 The Invitation for Bids issued by the Employer is not part of the Bidding Document.
	9.3 The Employer is not responsible for the completeness of the Bidding Document and its addenda, if they were not obtained directly from the source stated by the Employer in the Invitation for Bids.
	9.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Document. Failure to furnish all information or documentation required by the Bidding Document may result in the rejection of the bid.
10. Clarification of Bidding Document, Site Visit, Pre-Bid Meeting	10.1 A prospective Bidder requiring any clarification of the Bidding Document shall contact the Employer in writing at the Employer's address indicated in the BDS or raise his enquiries during the pre-bid meeting if provided for in accordance with ITB 10.4. The Employer will respond to any request for clarification, provided that such request is received no later than fourteen (14) days prior to the deadline for submission of bids. The Employer's response shall be in writing with copies to all Bidders who have acquired the Bidding Document in

	accordance with ITB 9.3, including a description of the inquiry but without identifying its source. Should the Employer deem it necessary to amend the Bidding Document as a result of a request for clarification, it shall do so following the procedure under ITB 11 and ITB 22.2.
	10.2 The Bidder, may on notifying the Employer in writing within the time stated in the BDS, visit and examine the site where the Smart Ticketing and Seat Reservation System and/or Services are to be installed and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and entering into a contract for the provision of Smart Ticketing and Seat Reservation System and/or Services. The costs of visiting the site shall be at the Bidder's own expense.
	10.3 The Bidder and any of its personnel or agents will be granted permission by the Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the Bidder, its personnel, and agents will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.
	10.4 The Bidder's designated representative is invited to attend a pre-bid meeting, if provided for in the BDS. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.
	10.5 The Bidder is requested, as far as possible, to submit any questions in writing, to reach the Employer not later than one week before the meeting.
	10.6 Minutes of the pre-bid meeting, including the text of the questions raised without identifying the source, and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Bidders who have acquired the Bidding Document in accordance with ITB 9.3. Any modification to the Bidding Document that may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an addendum pursuant to ITB 11 and not through the minutes of the pre-bid meeting.
	10.7 Nonattendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.
11. Amendment of Bidding Document	11.1 At any time prior to the deadline for submission of first and second stage bids, the Employer may amend the Bidding Document by issuing addenda.
	11.2 Any addendum issued shall be part of the Bidding Document and shall be communicated in writing to all who have obtained the Bidding Document from the Employer in accordance with ITB 9.3.
	11.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may, at its discretion, extend the deadline for the submission of bids, pursuant to ITB 22.2.

12. Cost of Bidding	12.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Employer shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.
13. Language of Bid	13.1 The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Employer, shall be written in the English language. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in the English language, in which case, for purposes of interpretation of the Bid, such translation shall govern.
C-1. First Stage Bid Preparation	
14. Documents Comprising the First Stage Bid	<p>14.1 At the first-stage, Bidders shall submit the First-Stage Bid consisting of two sealed envelopes, one containing the Technical Bid and the other the Price Bid, enclosed together in an outer single envelope. Bidders must use the Bidder's Response Format (BRF) provided to structure and submit their bids.</p> <p>14.2 The Technical Bid submitted by the Bidder shall comprise the following;</p> <ul style="list-style-type: none"> (a) The Letter of Technical Bid; (b) Bid Security or Bid-Securing Declaration, in accordance with ITB 24; (c) alternative Bids in accordance with ITB 16; (d) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 25.2; (e) documentary evidence in accordance with ITB 17, that the equipment and services offered by the Bidder in its bid or in any alternative bid are eligible; (f) documentary evidence in accordance with ITB 18, the Bidder's eligibility and qualifications to perform the contract if its Bid is accepted; (g) documentary evidence in accordance with ITB 19, that the equipment and services offered by the Bidder conform to the Bidding Document and/or details of deviations in accordance with ITB 19.2; (h) Technical Proposal in accordance with ITB 20; (i) list of subcontractors, in accordance with ITB 20.2; and (j) any other document required in the BDS. <p>14.3 In addition to the requirements under ITB 14.2, bids submitted by a Joint Venture shall include a copy of the Joint Venture Agreement entered into by all partners. Alternatively, a Letter of Intent to execute a Joint Venture Agreement in the event of a successful bid shall be signed by</p>

	<p>all partners and submitted with the bid, together with a copy of the proposed agreement.</p> <p>14.4 The Price Bid submitted by the Bidder shall comprise the following;</p> <ul style="list-style-type: none"> (a) The Letter of Price Bid (b) Price Schedules, in accordance with ITB 15 and ITB 21; (c) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 25.2; and (d) Other documentation and information which may be specified in the BDS
15. Letters of First Stage Bid, Attachments and Schedules	15.1 The Bidder shall complete the Letters of Technical and Price Bid and their attachments, the Letter of Modified Bid and its attachments, the Schedules, including the appropriate Price Schedules and Supplementary Price Schedules, using the relevant forms furnished in Section 4 (Bidding Forms). The forms must be completed as instructed in each form and as required in the BDS.
16. Alternative Bids	16.1 Unless otherwise specified in the BDS, alternative bids shall not be considered.
17. Documents Establishing the Eligibility of the Smart Ticketing and Seat Reservation System and/or Services	17.1 To establish the eligibility of the Smart Ticketing and Seat Reservation System and/or Services in accordance with ITB 5, Bidders shall complete the country of origin declarations in the Price Schedule Forms, included in Section 4 (Bidding Forms).
18. Documents Establishing the Eligibility and Qualifications of the Bidder	18.1 To establish its eligibility and qualifications to perform the Contract in accordance with Section 3 (Evaluation and Qualification Criteria), the Bidder shall provide the information requested in the corresponding Bidder Response Format included in Section 4 (Bidding Forms).
	18.2 Domestic Bidders, individually or in joint ventures, applying for eligibility for domestic preference shall supply all information required to satisfy the criteria for eligibility as described in ITB 50.
19. Documents Establishing Conformity of the Smart Ticketing and Seat Reservation System and/or Services	19.1 The Bidder shall furnish the information stipulated in Section 4 (Bidding Forms), in sufficient detail to demonstrate substantial responsiveness of its bid to the work requirements and the completion time.
	19.2 For major items of Smart Ticketing and Seat Reservation System and/or Services as listed by the Employer in Section 3 (Evaluation and Qualification Criteria), which the Bidder intends to purchase or subcontract, the Bidder shall give details of the name and nationality of the proposed Sub-Contractors, including manufacturers, for each of those items. In addition, the Bidder shall include in its bid information establishing compliance with the requirements specified by the Employer for these items. Quoted rates and prices will be deemed to apply to whichever Sub-Contractor is appointed, and no adjustment of the rates and prices will be permitted.

	<p>19.3 The written evidence of conformity of the Smart Ticketing and Seat Reservation System and/or Services shall be inserted into the tables that comprise the Bidder's response to items in Section 6 (Schedule of Requirements) in the form of written descriptions, literature, diagrams, certifications, and client references.</p> <p>19.4 The Bidder will provide an item-by-item response to the Employer's Schedule of Requirements, demonstrating what the Bidder will provide, and how from a technical, functional, business or Service perspective, as appropriate, its Smart Ticketing and Seat Reservation System and/or Services respond to the requirements. In demonstrating responsiveness, the commentary may include explicit cross references to the relevant pages in the supporting materials included in the Bid. Whenever a discrepancy arises between the item-by-item commentary and any catalogues, technical specifications, or other pre-printed materials submitted with the Bid, the item-by-item commentary shall prevail.</p> <p>19.5 A Preliminary Project Plan is required the details of which are described in Section 6 (Schedule of Requirements).</p> <p>19.6 A written confirmation that the Bidder accepts responsibility for the successful integration and inter-operability of all Smart Ticketing and Seat Reservation System and/or Services as required by the Bidding Documents.</p> <p>19.7 For purposes of the commentary to be furnished pursuant to ITB 19.4, the Bidder shall note that any references to brand names or model numbers or national or proprietary standards designated by the Employer in Section 6 (Schedule of Requirements) are intended to be descriptive and not restrictive (except where explicitly prohibited in the BDS for specific items or standards). The Bidder may substitute alternative brand/model names or standards in its bid, provided that it demonstrates to the Employer's satisfaction that the use of the substitute(s) will result in the Smart Ticketing and Seat Reservation System and/or Services being able to perform substantially equivalent to or better than that specified in Section 6 (Schedule of Requirements).</p>
<p>20. Technical Proposal, Subcontractors</p>	<p>20.1 The Bidder shall furnish a Technical Proposal, including a statement of work methods, equipment, personnel, schedule, and any other information as stipulated in Section 4 (Bidding Forms), in sufficient detail to demonstrate the adequacy of the Bidders' proposal to meet the Employer's requirements and the completion time.</p> <p>20.2 For major items of equipment and services as listed by the Employer in Criterion 2.6 of Section 3 (Evaluation and Qualification Criteria), which the Bidder intends to purchase or subcontract, the Bidder shall give details of the name and nationality of the proposed Subcontractors, including Manufacturers, for each of those items. In addition, the Bidder shall include in its Bid information establishing compliance with the requirements specified by the Employer for these items. Bidders are free to list more than one Subcontractor against each item of the plant and services.</p> <p>20.3 The Bidder shall be responsible for ensuring that any Subcontractor proposed complies with the requirements of ITB 4, and that any plant or</p>

	<p>services to be provided by the Subcontractor comply with the requirements of ITB 5 and ITB 15.1.</p>
<p>21. Bid Prices</p>	<p>21.1 Unless otherwise specified in the BDS, bidders shall quote for the entire Smart Ticketing and Seat Reservation System and/or Services on a “single responsibility” basis such that the total bid price covers all the Contractor’s obligations mentioned in or to be reasonably inferred from the Bidding Document in respect of the design, manufacture, including procurement and subcontracting (if any), delivery, construction, installation, completion, acceptance, commissioning and support of the Smart Ticketing and Seat Reservation System and/or Services as specified in Section 6(Schedule of Requirements). This includes all requirements under the Contractor’s responsibilities for testing, pre-commissioning and commissioning of the Smart Ticketing and Seat Reservation System and/or Services and, where so required by the Bidding Document, the acquisition of all permits, approvals and licenses, etc.; the operation, maintenance and training services and such other items and services as may be specified in the Bidding Document, all in accordance with the requirements of the General Conditions. Items against which no price is entered by the Bidder will not be paid for by the Employer when executed and shall be deemed to be covered by the prices for other items.</p> <p>21.2 Bidders shall give a breakdown of the prices in the manner and detail called for in the Price Schedules included in Section 4 (Bidding Forms).</p> <p>21.3 The price of items that the Bidder has left blank in the cost tables provided in the BRF shall be assumed to be included in the price of other items. Items omitted altogether from the price tables shall be assumed to be omitted from the Bid and, provided that the Bid is substantially responsive, an adjustment to the bid price will be made during evaluation in accordance with ITB 47.3.</p> <p>21.4 Unit prices must be quoted at a level of detail appropriate for calculation of any partial deliveries or partial payments under the contract, in accordance with the Implementation Schedule in Section 6 (Schedule of Requirements), and with GC and Appendix 7 (Terms and Procedures for Payment). Bidders may be required to provide breakdown of any composite or lump-sum items included in the price tables.</p> <p>21.5 The prices for Smart Ticketing and Seat Reservation System and/or Services are to be expressed and shall be defined and governed in accordance with the rules prescribed in the edition of Incoterms specified in the BDS, and quoted in the appropriate columns of the cost tables in the BRF as follows:</p> <p>(a) Products supplied from outside the Employer’s country:</p> <p>Unless otherwise specified in the BDS, the prices shall be quoted on a CIP (named place of destination) basis, exclusive of all taxes, stamps, duties, levies, and fees imposed in the Employer’s country. The named place of destination and special instructions for the contract of carriage are as specified in the BDS. In quoting the price, the Bidder shall be free to use transportation through carriers registered in any eligible countries. Similarly, the Bidder may obtain insurance Services from any eligible source country.</p>

	<p>(b) Locally supplied Products:</p> <p>Unit prices of Products offered from within the Employer's Country, shall be quoted on an EXW (ex-factory, ex works, ex warehouse or off-the-shelf, as applicable) basis, including all customs duties, levies, fees, sales and other taxes incurred until delivery of the Products, but excluding all VAT or sales and other taxes and duties/fees incurred for the Products at the time of invoicing or sales transaction, if the Contract is awarded.</p> <p>(c) Inland transportation:</p> <p>Unless states otherwise in the BDS, inland transportation, insurance and related local costs incidental to the delivery of the Products to the designated Project Sites must be quoted separately as a Service item in accordance with ITB 34.6, whether the Products are to be supplied locally or from outside the Employer's country, except when these costs are already included in the price of the Products, as is, e.g., the case, when ITB 34.5(a) specifies CIP, and the named places of destination are the Project Sites.</p> <p>21.6 The price of Services shall be quoted in total for each service (where appropriate, broken down into unit prices), separated into their local and foreign currency components. Prices must include all taxes, duties, levies and fees whatsoever, except only VAT or other indirect taxes, or stamp duties, that may be assessed and/or apply in the Employer's country on/to the price of the Services invoiced to the Employer, if the Contract is awarded. Unless otherwise specified in the BDS, the prices must include all costs incidental to the performance of the Services, as incurred by the Supplier, such as travel, subsistence, office support, communications, translation, printing of materials, etc. costs incidental to the delivery of the Services but incurred by the Employer or its staff, or by third parties, must be included in the price only to the extent such obligations are made explicit in these Bidding Documents (as, e.g., a requirement for the Bidder to include the travel and subsistence costs of trainees).</p> <p>21.7 Prices for Recurrent Costs beyond the scope of warranty services to be incurred during the Warranty Period, defined in GCC Clause 1.1 and prices for Recurrent Costs to be incurred during the Post-Warranty Services Period, defined in PC Clause 1. shall be quoted as Service prices in accordance with ITB 34.6 on the Recurrent Costs Form in detail, and on the Recurrent Costs Summary Form in currency total. Recurrent costs are all-inclusive of the costs necessary items such as spare parts, software license renewals, labor, etc., needed for the continued and proper operation of the Smart Ticketing and Seat Reservation System and/or Services and, if appropriate, of the Bidder's own allowance for price increases.</p> <p>21.8 The prices shall be either fixed or adjustable as specified in the BDS.</p> <p>21.9 In the case of Fixed Price, prices quoted by the Bidder shall be fixed during the Bidder's performance of the contract and not subject to variation on any account. A bid submitted with an adjustable price quotation will be treated as non-responsive and rejected.</p> <p>21.10 In the case of Adjustable Price, prices quoted by the Bidder shall be subject to adjustment during performance of the contract to reflect</p>
--	--

	<p>changes in the cost elements such as labor, material, transport and contractor's equipment in accordance with the procedures specified in the corresponding Appendix to the Contract Agreement. A bid submitted with a fixed price quotation will not be rejected, but the price adjustment will be treated as zero. Bidders are required to indicate the source of labor and material indices in the corresponding Form in Section 4 (Bidding Forms).</p> <p>21.11 If so indicated in the BDS, bids are being invited for individual lots (contracts) or for any combination of lots (packages). Bidders wishing to offer any price reduction (discount) for the award of more than one Contract shall specify in their Letter of Bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package, and the manner in which the price reductions will apply.</p> <p>21.12 If the BDS allows Bidders to quote separate prices for different lots (contracts), and the award to a single Bidder of multiple lots (contracts), the methodology to determine the lowest evaluated price of the lot (contract) combinations, including any discounts offered in the Letter of Bid, is specified in Section 3 (Evaluation and Qualification Criteria).</p>
<p>22. Currencies and Payments</p>	<p>22.1 The currency(ies) of the Bid shall be as specified in the BDS.</p> <p>22.2 Bidders may be required by the Employer to justify, to the Employer's satisfaction, their local and foreign currency requirements.</p>
<p>23. Period of Validity of Bids</p>	<p>23.1 Bids shall remain valid for the period specified in the BDS after the bid submission deadline date prescribed by the Employer. A bid valid for a shorter period shall be rejected by the Employer as non-responsive.</p> <p>23.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Employer may request Bidders to extend the period of validity of their bids. The request and the responses shall be made in writing. If a bid security is requested in accordance with ITB 24, the Bidder granting the request shall also extend the bid security for twenty-eight (28) days beyond the deadline of the extended validity period. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request shall not be required or permitted to modify its bid.</p>
<p>24. Bid Security</p>	<p>24.1 The Bidder shall furnish as part of its bid, either a bid-securing declaration or a bid security as specified in the BDS, in original form and in the amount and currency specified in the BDS.</p> <p>24.2 The bid security shall be a demand guarantee in any of the following forms at the Bidder's option:</p> <ul style="list-style-type: none"> (c) an unconditional bank guarantee; (d) an irrevocable letter of credit; or (e) a cashier's or certified check; <p>from a reputable source from an eligible country. The bid security shall be submitted either using the Bid Security Form included in Section 4(Bidding Forms) or in another substantially similar format approved by the Employer</p>

	<p>prior to bid submission. In either case, the form must include the complete name of the Bidder. The bid security shall be valid for twenty-eight days (28) beyond the original validity period of the bid, or beyond any period of extension if requested under ITB 23.2.</p> <p>24.3 Any bid not accompanied by an enforceable and compliant bid security shall be rejected by the Employer as non-responsive.</p> <p>24.4 The bid security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's furnishing of the performance security pursuant to ITB 60.</p> <p>24.5 The bid security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required performance security.</p> <p>24.6 The bid security may be forfeited:</p> <ul style="list-style-type: none"> (a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Letter of Bid or (b) if the successful Bidder fails to: <ul style="list-style-type: none"> (i) sign the Contract in accordance with ITB 59; or (ii) furnish a performance security in accordance with ITB 60. <p>24.7 The Bid Security of a JV shall be in the name of the JV that submits the bid. If the JV has not been legally constituted at the time of bidding, the Bid Security shall be in the names of all future partners as named in the letter of intent referred to in ITB 4.1.</p> <p>24.8 If a bid security is not required in the BDS, and</p> <ul style="list-style-type: none"> (a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Letter of Bid or (b) if the successful Bidder fails to: <ul style="list-style-type: none"> (i) sign the Contract in accordance with ITB 59; or (ii) furnish a performance security in accordance with ITB 60 <p>the Borrower may, if provided for in the BDS, declare the Bidder ineligible to be awarded a contract by the Borrower for a period of time as stated in the BDS</p>
<p>25. Format and Signing of Bids</p>	<p>25.1 The Bidder shall prepare one original set of the Technical Bid and one original set of the Price Bid comprising the Bid as described in ITB 14 and clearly mark it "ORIGINAL - TECHNICAL BID" and "ORIGINAL - PRICE BID". Alternative bids, if permitted in accordance with ITB 16, shall be clearly marked "ALTERNATIVE". In addition, the Bidder shall submit copies of the bid, in the number specified in the BDS and clearly mark each of them "COPY." In the event of any discrepancy between the original and the copies, the original shall prevail.</p> <p>25.2 The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as specified in the BDS and shall be attached to the Bid. The name and</p>

	<p>position held by each person signing the authorization must be typed or printed below the signature. All pages of the Bid, except for unamended printed literature, shall be signed or initialed by the person signing the Bid. If a Bidder submits a deficient authorization, the Bid shall not be rejected in the first instance. The Employer shall request the Bidder to submit an acceptable authorization within the number of days as specified in the BDS. Failure to provide an acceptable authorization within the prescribed period of receiving such a request shall cause the rejection of the Bid.</p> <p>25.3 A bid submitted by a Joint Venture shall be signed so as to be legally binding on all partners.</p> <p>25.4 Any amendments such as interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Bid</p>
<p>C-2. First Stage Bid Submission and Opening</p>	
<p>26. Submission, Sealing and Marking of Bids</p>	<p>26.1 Bidders may always submit their First-Stage Bids by mail or by hand. When so specified in the BDS, bidders shall have the option of submitting their bids electronically. Procedures for submission, sealing, and marking are as follows:</p> <p>(a) Bidders submitting Bids by mail or by hand shall enclose the original and each copy of the Bid, including alternative Bids, if permitted in accordance with ITB 13, in separate sealed envelopes, duly marking the envelopes as "ORIGINAL", "ALTERNATIVE" and "COPY." These envelopes containing the original and the copies shall then be enclosed in one single envelope. The rest of the procedures shall be in accordance with ITB 26.2, ITB 26.3 and ITB 26.4.</p> <p>(b) Bidders submitting bids electronically shall follow the electronic bid submission procedures specified in the BDS.</p> <p>26.2 The inner and outer envelopes shall:</p> <p>(a) bear the name and address of the Bidder;</p> <p>(b) be addressed to the Employer in accordance with ITB 30.1;</p> <p>(c) bear the specific identification of this bidding process indicated in accordance with ITB 1.1; and</p> <p>(d) bear a warning not to open before the time and date for bid opening.</p> <p>26.3 The outer envelopes and the inner envelopes containing the Technical Bid shall bear a warning not to open before the time and date for the opening of Technical Bid, in accordance with ITB 30.1.</p> <p>26.4 The inner envelopes containing the Price Bid shall bear a warning not to open until advised by the Employer in accordance with ITB 43.1.</p> <p>26.5 Alternative Bids, if permissible in accordance with ITB 16, shall be prepared, sealed, marked, and delivered in accordance with the</p>

	<p>provisions of ITB 25 and ITB 26, with the inner envelopes marked in addition "ALTERNATIVE NO." as appropriate.</p> <p>26.6 If all envelopes are not sealed and marked as required, the Employer will assume no responsibility for the misplacement or premature opening of the Bid.</p> <p>26.7 Instructions under this clause shall also apply to the Modified Bids, consisting of Revised Technical Proposals and Supplementary Price Schedules that shall be submitted in the Second-Stage in a single envelope.</p>
27. Deadline for Submission of First Stage Bids	<p>27.1 Bids must be received by the Employer at the address and no later than the date and time indicated in the BDS.</p> <p>27.2 The Employer may, at its discretion, extend the deadline for the submission of First Stage Bids by amending the Bidding Document in accordance with ITB 11, in which case all rights and obligations of the Employer and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.</p>
28. Late Bids	<p>28.1 The Employer shall not consider any Bid that arrives after the deadlines for submission of Bids, in accordance with ITB 27. Any Bid received by the Employer after the deadlines for submission of First-Stage and Second-Stage Bids shall be declared late, rejected, and returned unopened to the Bidder.</p>
29. Substitution, and Modification of First Stage Bids	<p>29.1 In case a Bidder wishes to substitute or modify its First Stage Bid after it has been submitted and prior to the deadline for First Stage Bid submission, it may do so by sending a written notice, as per ITB 10.1 and its substituted or modified First Stage Bid will be opened as per ITB 30.</p>
30. Opening of First Stage Bids by Employer	<p>30.1 The Employer shall open the Technical Bids in public at the address, on the date, and time specified in the BDS in the presence of Bidders` designated representatives and anyone who chooses to attend. Any specific electronic bid opening procedures required if electronic bidding is permitted in accordance with ITB 26.1, shall be as specified in the BDS. The Price Bids will remain unopened and will be held in custody of the Employer until the specified time of their opening. If the Technical Bid and the Price Bid are submitted together in one envelope, the Purchaser may reject the Bid. Alternatively, the Price Bid may be immediately resealed for later evaluation.</p> <p>30.2 First, envelopes marked "WITHDRAWAL" shall be opened and read out and the envelope with the corresponding Bid shall not be opened, but returned to the Bidder. No bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at bid opening</p> <p>30.3 Second, outer envelopes marked "SUBSTITUTION" shall be opened. The inner envelopes containing the Substitution Technical Bid and/or Substitution Price Bid shall be exchanged for the corresponding envelopes being substituted, which are to be returned to the Bidder unopened. Only the Substitution Technical Bid, if any,</p>

	<p>shall be opened, read out, and recorded. Substitution Price Bid will remain unopened. No envelope shall be substituted unless the corresponding Substitution Notice contains a valid authorization to request the substitution and is read out and recorded at bid opening.</p> <p>30.4 Next, outer envelopes marked "MODIFICATION" shall be opened. No Technical Bid and/or Price Bid shall be modified unless the corresponding Modification Notice contains a valid authorization to request the modification and is read out and recorded at the opening of Technical Bids. Only the Technical Bids, both Original as well as Modification, are to be opened, read out, and recorded at the opening. Price Bids, both Original as well as Modification, will remain unopened in accordance with ITB 30.1.</p> <p>30.5 All other envelopes holding the Technical Bids shall be opened one at a time, and the following read out and recorded:</p> <ul style="list-style-type: none"> (a) the name of the Bidder; (b) whether there is a modification or substitution; (c) the presence of a bid security or a Bid-Securing Declaration, if required; and (d) any other details as the Employer may consider appropriate <p>Only Technical Bids and alternative Technical Bids read out and recorded at bid opening shall be considered for evaluation. Unless otherwise specified in the BDS, all pages of the Letter of Technical Bid are to be initialed by at least three representatives of the Employer attending the bid opening. No Bid shall be rejected at the opening of Technical Bids except for late bids, in accordance with ITB 28.1.</p> <p>30.6 The Employer shall prepare a record of the opening of Technical Bids that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, or modification; and alternative Bid; and the presence or absence of a bid security or a Bid-Securing Declaration, if one was required. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders who submitted Bids on time, and posted online when electronic bidding is permitted.</p>
<p>C-3. First Stage Bid Evaluation</p>	
<p>31. Confidentiality</p>	<p>31.1 Information relating to the evaluation of First and Second Stage Bids and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process until the publication of contract award.</p>

	<p>31.2 Any attempt by a Bidder to influence the Employer in the evaluation of the First and Second Stage Bids or Contract award decisions may result in the rejection of its bid.</p> <p>31.3 Notwithstanding ITB 31.2, from the time of First Stage bid opening to the time of Contract award, if any Bidder wishes to contact the Employer on any matter related to the bidding process, it should do so in writing.</p>
32. Deviations, Reservations, and Omissions	<p>32.1 During the evaluation of bids, the following definitions apply:</p> <p>(a) "Deviation" is a departure from the requirements specified in the Bidding Document;</p> <p>(b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and</p> <p>(c) "Omission" is the failure to submit part or all of the information or documentation required in the Bidding Document.</p>
33. Determination of Responsiveness of First Stage Bids	<p>33.1 The Employer will examine the First Stage Bids to determine whether they are complete, whether the documents have been properly signed and whether the First Stage Bids are generally in order. Any First Stage Bid found to be unsigned or signed by an unauthorized person or not meeting the minimum levels of the performance or other criteria specified in the bidding document may be rejected by the Employer and not included for further consideration.</p>
	<p>33.2 Provided that a First Stage Technical Bid is generally responsive, the Employer may request that the Bidder submits information or documentation, within a reasonable period of time prior to clarification meetings in accordance with ITB36, to rectify deviations, reservations and omissions on the commercial requirements of First Stage Bids in accordance with ITB14.1.</p>
	<p>33.3 The Employer may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial omissions in the bid related to documentation requirements. Failure of the Bidder to comply with the request may result in the rejection of its bid.</p>
34. Technical Evaluation of First Stage Bids	<p>34.1 The Employer will carry out a detailed technical evaluation of the First Stage Bids in order to determine whether the technical aspects are in compliance with the Bidding Document. In order to reach such a determination, the Employer will examine and compare the technical aspects of the First Stage Bids on the basis of the information supplied by the bidders. The categories of technical features that could be evaluated are generally defined below and specifically identified in Section 3 (Evaluation and Qualification Criteria):</p> <p>(a) Performance, capacity, or functionality features such as those that either exceed levels specified as mandatory or desirable in Section 6 (Schedule of Requirements); meet the Employers business requirements, reduce the Employer's level of risk, or influence the life-cycle cost and effectiveness of the Products and/or Services.</p>

	<p>(b) Usability features, such as ease of use, ease of administration and implementation, or ease of expansion, compatibility with existing infrastructure, systems and applications, which influence life-cycle cost and effectiveness of the Products and/or Services.</p> <p>(c) The thoroughness, reasonableness, and responsiveness of the Bidder's preliminary plans such as the project plan, implementation plan, and transition plan in assisting the Employer to successfully achieve its requirements.</p> <p>(d) The thoroughness, reasonableness, and responsiveness of the proposed arrangements for support such as management and coordination, training, quality assurance, technical support, logistics, problem resolution, and transfer of knowledge, and other such activities as specified in Section 6 (Schedule of Requirements).</p> <p>(e) Other relevant factors, if any, listed in Section 3 (Evaluation and Qualification Criteria).</p>
35. Eligibility and Qualification of the Bidder	<p>35.1 The Employer shall determine to its satisfaction whether Bidders determined as having submitted responsive Bids are eligible and meet the qualification criteria specified in Section 3(Evaluation and Qualification Criteria).</p> <p>35.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 11, and on any additional information which the Employer may request from the Bidder to support such evidence.</p> <p>35.3 An affirmative determination will be a prerequisite for the Employer to invite the Bidder to a clarification meeting in accordance with ITB 36. A negative determination will result in rejection of the Bidder's bid.</p>
	<p>35.4 The capabilities of the manufacturers and Sub-Contractors proposed to be used by Bidders will also be evaluated for acceptability in accordance with Section 3 (Evaluation and Qualification Criteria). Should a manufacturer or Sub-Contractor be determined to be unacceptable, if invited to submit a Second Stage Bid, the Bidder will be required to substitute an acceptable manufacturer or Sub-Contractor.</p>
D. Clarification of First Stage Bids	
36. Clarification Procedures	<p>36.1 Among Bidders who submitted First Stage Bids that are found to be generally responsive to the minimum operating and performance requirements as laid out, if any, in Section 6 (Schedule of Requirements), the Employer may conduct clarification meetings with each or any Bidder. The clarification meetings shall clarify any aspects of a Bidder's Technical Bid that require explanation and to review any Bidder's proposed deviations and alternative solutions. The Employer may also seek clarifications in writing.</p>
	<p>36.2 At the clarification meetings, the Employer may bring to the attention of the Bidder any amendments or changes which the Employer may require to be made to the First Stage Bid; however, the Employer may not require amendments or changes at variance from the Employer's</p>

	requirements unless the Employer intends to amend the Bidding Document in accordance with ITB 37.1(a).
	36.3 The Employer will advise the Bidder of any exceptions or deviations in the First Stage Bid, that are unacceptable and that are to be withdrawn in the Second Stage bid, and of such exceptions or deviations that the Employer finds acceptable.
	36.4 The Employer will issue a Memorandum entitled "Changes Required Pursuant to First Stage Evaluation", documenting the clarifications made in writing and/or in a meeting if any, and including an Annex listing all decisions, and required amendments or changes resulting from the clarification of the First Stage Bid. The Memorandum will be communicated to the Bidder as part of the invitation to submit the Second Stage Bid.
37. Invitation to Submit Second Stage Bids	<p>37.1 At the end of the first stage clarification process conducted as necessary, pursuant to ITB 36:</p> <ul style="list-style-type: none"> (a) the Employer may need to issue an amendment to the Bidding Document resulting from the First Stage Bid evaluation and clarification process, with the objective of clarifying the requirements and improving competition without compromising essential project objectives and/or (b) in regard to all bidders, the Employer will either: <ul style="list-style-type: none"> (i) invite the Bidder to submit a Second Stage Bid for the second stage based on its First Stage Bid taking into account the Bidding Document, if and as amended, and any other modifications as recorded in the Annex to the Memorandum entitled "Changes Required Pursuant to Technical Bid Evaluation". Bidders will be allowed to submit only one Second Stage Bid, or (ii) notify the Bidder that its bid has been rejected on the grounds of being substantially nonresponsive, or that the Bidder does not meet the minimum qualification requirements set forth in the Bidding Document. <p>37.2 The deadline for submission of Second Stage Bids will be specified in the invitation to submit Second Stage Bids, pursuant to ITB 40.1.</p> <p>37.3 Bidders are not allowed to form joint venture(s) or consortium (consortia) with other bidders, nor change the partner or structure of the joint venture or consortium if the Bidder in the First Stage was a joint venture or consortium.</p> <p>37.4 Bidders not wishing to change their Technical Bids or Proposals may withdraw from the bidding process and their Price Bids will be returned unopened.</p>

E-1. Second Stage Bid Preparation

38. Documents Comprising the Second Stage Bid

38.1 The documents comprising the Second Stage Bid are listed in Section 4 (Bidding Forms), in the Bidder Response Format (BRF). Bidders must use the BRF provided to structure and submit their bids. The Modified Bid submitted by the Bidder in the second-stage shall comprise the following:

- (a) Letter of Modified Bid
- (b) Completed supplementary schedules as required, including Supplementary Price Schedules, in accordance with ITB 15 and ITB 21;
- (c) The Modified Technical Bid, comprising any modifications required to the Technical Bid as recorded in the Memorandum entitled "Changes Required Pursuant to Technical Bid Evaluation";
- (d) Documentary evidence establishing in accordance with ITB 14, that any additional or varied plant and services offered by the Bidder, and not included in the Technical Bid, are eligible;
- (e) Documentary evidence regarding any changes that may have occurred between the time of submitting the Technical and the Modified Technical Bids that have any material effect on the Bidder's eligibility and qualifications to perform the Contract;
- (f) Documentary evidence establishing that any additional or varied facilities to be supplied and installed by the Bidder, in accordance with the requirements of the Memorandum entitled "Changes Required Pursuant to Technical Bid Evaluation", are technically acceptable. The documentary evidence of the conformity of the plant and services to the requirements of the Memorandum entitled "Changes Required Pursuant to Technical Bid Evaluation" may be in the form of literature, drawings and data;
- (g)) If, as a result of complying with the memorandum "Changes Required Pursuant to Technical Bid Evaluation", the Bidder proposes to engage any Subcontractors or Manufacturers additional to or different from those named in its Technical Bid for major items of plant and services as listed by the Employer in Section 3 (Evaluation and Qualification Criteria), which the Bidder intends to purchase or subcontract, the Bidder shall give details of the name and nationality of the proposed Subcontractors, including Manufacturers, for each of those items. In addition, the Bidder shall include in its bid information establishing compliance with the requirements specified by the employer for these items; and
- (h) Other documentation and information which may be specified in the BDS.

E-2. Second Stage Bid Submission and Opening

<p>39. Submission, Sealing and Marking of Second Stage Bids</p>	<p>39.1 Bidders must use the bidder Response Format (BRF) provided in Section 4. Bidders may always submit their Modified Bids by mail or by hand. When so specified in the BDS, Bidders shall have the option of submitting their Bids electronically. Procedures for submission, sealing, and marking are as follows:</p> <p>(a) Bidders submitting bids by mail or by hand shall enclose the original and each copy of the Bid, in separate sealed envelopes, duly marking the envelopes as “MODIFIED BID - ORIGINAL”, and “MODIFIED BID - COPY.” These envelopes containing the original and the copies shall then be enclosed in one single envelope. The rest of the procedures shall be in accordance with ITB 39.2 and ITB 39.3.</p> <p>(b) Bidders submitting bids electronically shall follow the electronic bid submission procedures specified in the BDS.</p> <p>39.2 The inner and outer envelopes shall:</p> <p>(a) bear the name and address of the Bidder;</p> <p>(b) be addressed to the Employer in accordance with ITB 40.1;</p> <p>(c) bear the specific identification of this bidding process indicated in the BDS 1.1; and</p> <p>(d) bear a warning not to open before the time and date for bid opening.</p> <p>39.3 If all envelopes are not sealed and marked as required, the Employer will assume no responsibility for the misplacement or premature opening of the bid.</p>
<p>40. Deadline for Submission of Second Stage Bids</p>	<p>40.1 Modified Bids must be received by the Employer at the address and no later than the date and time indicated in the Letter of Invitation to submit Modified Bids.</p> <p>40.2 The Employer may, at its discretion extend the deadline for the submission of Second Stage Bids by amending the Bidding Document in accordance with ITB 11, in which case all rights and obligations of the Employer and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.</p>
<p>41. Late Bids</p>	<p>41.1 The Employer shall not consider any Second Stage Bids that arrives after the deadline for submission of Second Stage Bids, in accordance with ITB 40. Any bid received by the Employer after the deadline for submission of Second Stage Bids shall be declared late, rejected, and returned unopened to the Bidder.</p>
<p>42. Withdrawal, Substitution, and Modification of Second Stage Bids</p>	<p>42.1 A Bidder may withdraw, substitute, or modify its Bid after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 25.2, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the Bid must accompany the respective written notice. All notices must be</p> <p>(a) prepared and submitted in accordance with ITB 38 and ITB 39 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked</p>

	<p style="text-align: center;">“MODIFIED BID - WITHDRAWAL,” “MODIFIED BID - SUBSTITUTION,” “MODIFIED BID - MODIFICATION”; and</p> <p>(b) received by the Employer prior to the deadline prescribed for submission of Second Stage Bids, in accordance with ITB 40.</p> <p>42.2 Modified Bids requested to be withdrawn in accordance with ITB 42.1 shall be returned unopened to the Bidders.</p> <p>42.3 No bid may be withdrawn, substituted or modified in the interval between the deadline for submission of Modified Bids and the expiration of the period of bid validity specified by the Bidder on the Letter of Modified Bid Form or any extension thereof;</p>
<p>43. Second Stage Bid Opening</p>	<p>43.1 In the second-stage, the Employer shall open the Price Bids submitted during the first-stage and the Modified Bids consisting of the Revised Technical Bids with the supplementary schedules, including the Supplementary Price Schedules, in public at the address, on the date, and time specified in the Letter of Invitation to submit Modified Bids in the presence of Bidders’ designated representatives and anyone who choose to attend. Any specific electronic bid opening procedures required if electronic bidding is permitted in accordance with ITB 39.1 shall be as specified in the BDS.</p> <p>43.2 First, envelopes marked “MODIFIED BID - WITHDRAWAL” shall be opened and read out and the envelope with the corresponding Bid shall not be opened but returned to the Bidder. No bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at bid opening. Next, envelopes marked “MODIFIED BID - SUBSTITUTION” shall be opened and read out and exchanged with the corresponding Bid being substituted, and the substituted bid shall not be opened, but returned to the Bidder. No bid substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at bid opening. Envelopes marked “MODIFIED BID - MODIFICATION” shall be opened and read out with the corresponding Bid. No bid modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at bid opening. Only envelopes that are opened and read out at bid opening shall be considered further.</p> <p>43.3 All other envelopes shall be opened one at a time, reading out the name of the Bidder and whether there is a modification; the Bid Price(s), including any discounts; the presence of a bid security, or a Bid-Securing Declaration, if required; and any other details as the Employer may consider appropriate. Only discounts read out at bid opening shall be considered for evaluation. Unless otherwise specified in the BDS, all pages of the Letter of Price Bid, Letter of Modified Bid, and Price Schedules including Supplementary Price Schedules are to be initialed by at least three representatives of the Employer attending the bid</p>

	<p>opening. No Bid shall be rejected at bid opening except for late bids, in accordance with ITB 41.1.</p> <p>43.4 The Employer shall prepare a record of the Bid opening that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, or modification; the Bid Price, per lot if applicable, including any discounts; and the presence or absence of a bid security or a Bid-Securing Declaration, if one was required. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders who submitted Bids on time and posted online when electronic bidding is permitted.</p>
<p>E-3. Second Stage Bid Evaluation and Comparison</p>	
<p>44. Clarification of Second Stage Bids</p>	<p>44.1 To assist in the examination, evaluation, and comparison of the Bids in the second stage, and qualification of the Bidders, the Employer may, at its discretion, ask any Bidder for a clarification of its bid. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered. The Employer's request for clarification and the response shall be in writing. No change in the prices or substance of the bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Second Stage Bids, in accordance with ITB 48.1.</p> <p>44.2 If a Bidder does not provide clarifications of its bid by the date and time set in the Employer's request for clarification, its bid may be rejected.</p>
<p>45. Deviations, Reservations, and Omissions</p>	<p>45.1 During the evaluation of Bids in the Second Stage, the following definitions apply:</p> <ul style="list-style-type: none"> (a) "Deviation" is a departure from the requirements specified in the Bidding Document; (b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and (c) "Omission" is the failure to submit part or all of the information or documentation required in the Bidding Document.
<p>46. Determination of Responsiveness</p>	<p>46.1 The Employer's determination of a bid's responsiveness is to be based on the contents of the bid itself submitted as of the Second Stage, as defined in ITB 38.</p>
	<p>46.2 A substantially responsive bid is one that meets the requirements of the Bidding Document and has properly incorporated all modifications listed in the Memorandum entitled "Changes Required Pursuant to the First Stage Evaluation", without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that,</p> <ul style="list-style-type: none"> (a) if accepted, would:

	<ul style="list-style-type: none"> (i) affect in any substantial way the scope, quality, or performance of the Smart Ticketing and Seat Reservation System and/or Services specified in the Contract; or (ii) limit in any substantial way, inconsistent with the Bidding Document, the Employer's rights or the Bidder's obligations under the proposed Contract; or <p>(b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive bids.</p> <p>46.3 A Second Stage bid containing technical or commercial deviations or alternatives not submitted as part of the First Stage bid will be treated as nonresponsive.</p> <p>46.4 If a bid is not substantially responsive to the requirements of the Bidding Document and the Memorandum entitled "Changes Required Pursuant to the First Stage Evaluation", it shall be rejected by the Employer and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.</p>
<p>47. Nonmaterial Nonconformities</p>	<p>47.1 Provided that a bid is substantially responsive, the Employer may waive any nonconformities in the bid that do not constitute a material deviation, reservation or omission.</p>
	<p>47.2 Provided that a bid is substantially responsive, the Employer may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the price of the bid. Failure of the Bidder to comply with the request may result in the rejection of its bid.</p>
	<p>47.3 Provided that a bid is substantially responsive, the Employer shall rectify nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component. The adjustment shall be made using the method indicated in Section 3(Evaluation and Qualification Criteria).</p>
<p>48. Correction of Arithmetical Errors</p>	<p>48.1 Provided that the bid is substantially responsive, the Employer shall correct arithmetical errors on the following basis:</p> <ul style="list-style-type: none"> (a) if there is a discrepancy between the unit price and the total price, which is obtained by multiplying the unit price and quantity, or between added or subtracted subtotals and totals, the unit or subtotal price shall prevail and the total price shall be corrected, unless in the opinion of the Employer there is an obvious misplacement of the decimal point in the unit or subtotal prices, in which case the line item total as quoted shall govern and the unit price or subtotal shall be corrected. (b) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) above.

	48.2 If the Bidder that submitted the lowest evaluated bid does not accept the correction of errors, its bid shall be declared non-responsive
49. Conversion to Single Currency	49.1 For evaluation and comparison purposes, the currency(ies) of the bid shall be converted into a single currency as specified in the BDS.
50. Margin of Preference	50.1 Unless otherwise specified in the BDS, no margin of preference shall apply.
51. Second-Stage Examination of Bids	<p>51.1 The Employer shall examine the first-stage Price Bids and second-stage Modified Bids to confirm that all documents and technical documentation requested in ITB 38.1 have been provided, and to determine the completeness of each document submitted.</p> <p>51.2 The Employer shall confirm, following the opening of the Price Bids and Modified Bids, that the following documents and information have been provided. If any of these documents or information is missing, the offer shall be rejected.</p> <ul style="list-style-type: none"> (a) The Letter of Modified Bid; (b) Price Bids and Modified Bids, including: (c) Revised Technical Bid (d) Modified Schedules, including Price Schedules and Supplementary Price Schedules, in accordance with ITB 15 and ITB 21; (e) Written confirmation of authorization to commit the Bidder; and (f) Manufacturer's Authorization, if applicable.
52. Second Stage Evaluation of Bids	<p>52.1 The Employer will carry out a detailed evaluation of the Bids in the second stage to determine whether the technical aspects concerning the modifications to the technically acceptable base or alternative bid detailed in the Memorandum entitled "Changes Required Pursuant to the First Stage Evaluation", pursuant to ITB 36.4, have been properly addressed and are substantially responsive to the requirements set forth in the Bidding Document.</p> <p>52.2 The evaluation will be performed assuming either that:</p> <ul style="list-style-type: none"> (a) the Contract will be awarded to the lowest evaluated Bidder for the entire Smart Ticketing and Seat Reservation System and/or Services required by the Employer; or (b) if specified in the Section 3 (Evaluation and Qualification Criteria), Contracts will be awarded to the Bidders for each individual lot, or slice defined in Section 6 (Schedule of Requirements) whose bids result in the lowest combined evaluated price for the entire Smart Ticketing and Seat Reservation System and/or Services required by the Employer. <p>52.3 The Employer shall use the criteria and methodologies indicated in this Clause. No other evaluation criteria or methodologies shall be permitted.</p>

52.4 The Employer's evaluation of a bid will be made on the basis of prices quoted in accordance with ITB 21.

52.5 The Employer's evaluation of responsive bids, if so specified in Section 3 (Evaluation and Qualification Criteria), will take into account technical factors, in addition to price factors. An Evaluated Bid Score (B) will be calculated for each particular responsive bid using the following formula, which permits a comprehensive assessment of the bid price and the technical merits of each particular bid:

$$B \equiv \frac{P_{low}}{P} X + \frac{T}{T_{high}} (100 - X)$$

Where:

- P low = the lowest of all Evaluated Bid Prices among responsive bids
- P = Evaluated Bid Price for a particular bid
- T = the total Technical Score awarded to a particular bid
- T high = the total Technical Score achieved by the bid that was scored highest among all responsive bids
- X = points weighting (out of 100) for the Price factor as specified in the BDS

The bid with the highest Evaluated Bid Score (B) among responsive bids shall be termed the Lowest Evaluated Bid and is eligible for Contract award, provided the Bidder was pre-qualified and/or it was found to be qualified to perform the Contract in accordance with ITB 54 (Eligibility and Qualification of the Bidder).

Technical Evaluation

52.6 If, in addition to the cost factors, the Employer has chosen to give weight to important technical factors (i.e., the price weight, X, is less than 100 in the evaluation), that cannot be reduced to life-cycle costs or pass/fail criteria, the Total Technical Points assigned to each bid in the Evaluated Bid Formula will be determined by adding and weighting the scores assigned by an evaluation committee to technical features of the bid in accordance with the criteria set forth below.

- (a) The categories of technical features that could be evaluated are generally defined below and specifically identified in Section 3(Evaluation and Qualification Criteria):
- (i) Performance, capacity, or functionality features such as those that either exceed levels specified as mandatory or desirable in Section 6(Schedule of Requirements); meet the Employer's business requirements, reduce the Employer's level of risk, or

	<p>influence the life-cycle cost and effectiveness of the Smart Ticketing and Seat Reservation System and/or Services.</p> <p>(ii) Usability features, such as ease of use, ease of administration and implementation, or ease of expansion, compatibility with existing infrastructure, systems and applications, which influence life-cycle cost and effectiveness of the Smart Ticketing and Seat Reservation System and/or Services.</p> <p>(iii) The thoroughness, reasonableness, and responsiveness of the Bidder’s preliminary plans such as the project plan, implementation plan, and transition plan in assisting the Employer to successfully achieve its requirements.</p> <p>(iv) The thoroughness, reasonableness, and responsiveness of the proposed arrangements for support such as management and coordination, training, quality assurance, technical support, logistics, problem resolution, and transfer of knowledge, and other such activities as specified in the Section 6(Schedule of Requirements).</p> <p>(v) Other relevant factors, if any, listed in Section 3 (Evaluation and Qualification Criteria).</p> <p>(b) As specified in Section 3 (Evaluation and Qualification Criteria), appropriate features within these technical categories will be identified and given a weighting as part of the technical evaluation.</p> <p>(c) During the evaluation process, the evaluation committee will assign to each selected feature a whole number score from 0 to 4, where 0 means that the feature is absent, and 1 to 4 represents predefined values as to the degree to which the Bidder has met the requirements of the selected feature. The scoring will be 1 for the feature being present but showing deficiencies; 2 for meeting the requirements; 3 for marginally exceeding the requirements; and 4 for significantly exceeding the requirements.</p> <p>(d) The Total Technical Score (T) is the combined weighted scores of all the technical features evaluated using the following formulae:</p> $T \equiv \frac{Sa}{Sta} WA + \frac{Sb}{Stb} WB + \frac{Sc}{Stc} WC$ <p>Where, for example, there is an evaluation of three (3) features:</p> <p>Sa = Score by the particular bid on features A, B, C, etc.</p> <p>Sta= Highest achievable score on features A, B, C, etc.</p> <p>WA = Weighted points allocated to features A, B, C, etc.</p> <p>In the worked example below, assume the points weighting (100-X) for Technical factors is 30 and the three technical features A, B, and C to be evaluated are allocated weightings of 5, 15, and 10 points respectively. On the scoring scale, 4 is the maximum score achievable.</p>
--	---

The particular Bidder in question scores 2/4, 3/4, and 4/4 on features A, B, and C respectively.

The Particular Bidder's Total Technical Score (T) is calculated as:

$$T \equiv \frac{2}{4} 5 + \frac{3}{4} 15 + \frac{4}{4} 10$$

$$= 23.75$$

Price Evaluation

52.7 The Evaluated Bid Price (P) for each responsive bid will be determined as the sum of the Adjusted Bid Price (AP) plus the Recurrent Costs (R); where the Adjusted Bid Price (AP) is determined as:

- (a) the price of the Smart Ticketing and Seat Reservation Products offered from within or from outside the Employer's country, in accordance with ITB 21.5; plus
- (b) the total price for all Services such as software development, transportation, insurance, installation, customization, integration, commissioning, testing, acceptance, training, technical support, repair, and any other Services.
- (c) With adjustments for:
 - (i) Products and/or Services that are left out or are necessary to correct minor deviations of the bid will be added to the total bid price using costs taken from the highest prices from other responsive bids for the same Products and/or Services, or in the absence of such information, the cost will be estimated at prevailing list prices. If the missing Products and/or Services are scored a technical failure, the relevant score will be set at zero.
 - (ii) Price adjustment due to quantifiable non-material nonconformities in accordance with ITB 47.
 - (iii) Corrections to errors in arithmetic, in accordance with ITB 48.
 - (iv) Converting the amount resulting from applying (i) to (iii) above, if relevant, to a single currency in accordance with ITB 49.
 - (v) The evaluation factors indicated in Section 3 (Evaluation and Qualification Criteria).
- (d) The Recurrent Costs (R) are reduced to net present value and determined using the following formula:

	$R \equiv \sum_{x=1}^{N+M} \frac{R_x}{(1+I)^x}$ <p>Where</p> <p>N = number of years of the Warranty Period, defined in PC Clause 29.2(c)</p> <p>M = number of years of the Post-Warranty Services Period, as defined in PC Clause 1</p> <p>X = an index number 1, 2, 3, ... N + M representing each year of the combined Warranty Service and Post-Warranty Service Periods</p> <p>R_x= total Recurrent Costs per year “x,” as recorded in the Recurrent Cost Form</p> <p>I = discount rate to be used for the Net Present Value calculation, as specified in BDS.</p> <p>52.8 If price adjustment is allowed in accordance with ITB 21.8, the estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in bid evaluation.</p> <p>52.9 If this Bidding Document allows Bidders to quote separate prices for different lots (contracts), and the award to a single Bidder of multiple lots (contracts), the methodology to determine the lowest evaluated price of the lot (contract) combinations, including any discounts offered in the Letter of Bid, is specified in Section 3 (Evaluation and Qualification Criteria).</p> <p>52.10 If the bid, which results in the Lowest Evaluated Bid, is seriously unbalanced or front loaded in the opinion of the Employer, the Employer may require the Bidder to produce detailed price analyses for any or all items of the Price Schedules, to demonstrate the internal consistency of those prices with the methods and time schedule proposed. After evaluation of the price analyses, taking into consideration the terms of payment, the Employer may require that the amount of the performance security be increased at the expense of the Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.</p>
<p>53. Comparison of Bids</p>	<p>53.1 The Employer shall compare all substantially responsive Second Stage Bids in accordance with ITB 52.7 to determine the Lowest Evaluated Bid.</p>

<p>54. Eligibility and Qualification of the Bidder</p>	<p>54.1 The Employer shall determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated and substantially responsive bid is eligible and meets the qualifying criteria specified in Section 3 (Evaluation and Qualification Criteria).</p> <p>54.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 18.</p> <p>54.3 An affirmative determination shall be a prerequisite for award of the Contract to the Bidder. A negative determination shall result in disqualification of the bid, in which event the Employer shall proceed to the next Lowest Evaluated Bid to make a similar determination of that Bidder's qualifications to perform satisfactorily.</p> <p>54.4 The capabilities of the manufacturers and Sub-Contractors proposed in its Bid to be used by the Lowest Evaluated Bidder for identified major items of supply or services will also be evaluated for acceptability in accordance with Section 3 (Evaluation and Qualification Criteria). Their participation should be confirmed with a letter of intent between the parties, as needed. Should a manufacturer or Sub-Contractor be determined to be unacceptable, the Bid will not be rejected, but the Bidder will be required to substitute an acceptable manufacturer or Sub-Contractor without any change to the bid price. Prior to signing the Contract, the corresponding Appendix to the Contract Agreement shall be completed, listing the approved manufacturers or Sub-Contractors for each item concerned.</p> <p>54.5 Prior to signing the Contract, the corresponding Appendix to the Contract Agreement shall be completed, listing the approved Manufacturers or Subcontractors for each item concerned.</p>
<p>55. Employer's Right to Accept Any Bid, and to Reject Any or All Bids</p>	<p>55.1 The Employer reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to Bidders. In case of annulment, all bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.</p>
<p>F. Award of Contract</p>	
<p>56. Employer's Right to Vary Quantities at Time of Award</p>	<p>56.1 The Employer reserves the right at the time of Contract award to increase or decrease, by the percentage(s) indicated in the BDS, any of the following:</p> <ul style="list-style-type: none"> (e) the quantity of substantially identical Smart Ticketing and Seat Reservation System and/or Services; or (f) the quantity of individual Hardware, Software, related equipment, Materials, products, and other Goods that are components of the Project to which this procurement applies; or (g) the quantity of Installation or other Services to be performed,

	from that originally specified in Section 6 (Schedule of Requirements) (as amended by any Addenda issued pursuant to ITB 11), without any change in unit prices or other items and conditions.
57. Award Criteria	57.1 The Employer shall award the Contract to the Bidder whose offer has been determined to be the Lowest Evaluated Bid and is substantially responsive to the Bidding Document, provided further that the Bidder is determined to be eligible and qualified to perform the Contract satisfactorily.
58. Notification of Award	<p>58.1 Prior to the expiration of the period of bid validity, the Employer shall notify the successful Bidder, in writing, that its bid has been accepted. The notification letter (hereinafter an in the Conditions of Contract and Contract Forms called the "Letter of Acceptance") shall specify the sum that the Employer will pay the Contractor in consideration of the execution and completion of the Smart Ticketing and Seat Reservation System and/or Services (hereinafter and in the Conditions of Contract and Contract Forms called "the Contract Price").</p> <p>58.2 At the same time, the Employer shall also notify all other Bidders of the results of the bidding. The Employer will publish in an English language newspaper or well-known freely accessible website the results identifying the Bid and lot numbers, and the following information: (i) name of each Bidder who submitted a Bid; (ii) bid prices as read out at bid opening; (iii) name and evaluated prices of each Bid that was evaluated; (iv) name of Bidders whose Bids were rejected and the reasons for their rejection; and (v) name of the winning Bidder, and the price it offered, as well as the duration and summary scope of the contract awarded. After publication of award, unsuccessful Bidders may request in writing to the Employer for a debriefing, seeking explanations on the grounds on which their Bids were not selected.</p> <p>58.3 Until a formal contract is prepared and executed, the notification of award shall constitute a binding Contract.</p> <p>58.4 The Employer shall promptly respond in writing to any unsuccessful Bidder who, after notification of award in accordance to ITB 58.2, requests in writing the grounds on which its bid was not selected.</p>
59. Signing of Contract	<p>59.1 Promptly upon notification, the Employer shall send the successful Bidder the Contract Agreement.</p> <p>59.2 Within twenty-eight (28) days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return the Contract Agreement to the Employer.</p>

<p>60. Performance Security</p>	<p>60.1 Within twenty-eight (28) days of the receipt of notification of award from the Employer, the successful Bidder shall furnish the performance security in accordance with the General Conditions, subject to ITB 52.10, using for that purpose the Performance Security Form included in Section 9 (Contract Forms), or another form acceptable to the Employer.</p> <p>60.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security or execution of the Bid Securing Declaration. In that event the Employer may award the Contract to the next Lowest Evaluated Bidder whose offer is substantially responsive and is determined by the Employer to be qualified to perform the Contract satisfactorily.</p>
<p>61. Adjudicator</p>	<p>61.1 Unless the BDS states otherwise, the Employer proposes that the person named in the BDS be appointed as Adjudicator under the Contract to assume the role of informal Contract dispute mediator, as described in GC Clause 52. In this case, a resume of the named person is attached to the BDS. The proposed hourly fee of the Adjudicator is specified in the BDS. The expenses that would be considered reimbursable to the Adjudicator are also specified in the BDS. If a Bidder does not accept the Adjudicator proposed by the Employer, it should state its non-acceptance in its Bid Submission Form and make a counterproposal of an Adjudicator and an hourly fee, attaching a resume of the alternative. If the successful Bidder and the Adjudicator nominated in the BDS happen to be from the same country, and this is not the country of the Employer too, the Employer reserves the right to cancel the Adjudicator nominated in the BDS and propose a new one. If by the day the Contract is signed, the Employer and the successful Bidder have not agreed on the appointment of the Adjudicator, the Adjudicator shall be appointed, at the request of either party, by the Appointing Authority specified in the PC clause relating to GC Clause 52.1(e), or if no Appointing Authority is specified there, the Contract will be implemented without an Adjudicator.</p>

Section II. Bid Data Sheet

This section consists of provisions that are specific to each procurement and supplement the information or requirements included in Section 1 (Instructions to Bidders).

A. Introduction

ITB 1.1	<p>The number of the Invitation for Bids is: CSREIP/ADB/ICB/IT/02</p> <p>The Employer is: The Ministry of Transport and Civil Aviation, Sri Lanka</p> <p>The name of the ICB is: Smart Ticketing and Seat Reservation System for Sri Lanka Railways</p> <p>The identification number of the ICB is: CSREIP/ADB/ICB/IT/02</p> <p>The number and identification of lots (contracts) comprising this ICB is: :None</p>
ITB 2.1	<p>The Borrower is: Democratic socialist Republic of Sri Lanka</p> <p>The name of the Project is: Colombo Suburban Railway Efficiency Improvement Project</p>

B. Contents of Bidding Document

ITB 10.1	<p>For <u>clarification purposes</u> only, the Employer's address is:</p> <p>Attention: Project Director, Colombo Suburban Railway Project</p> <p>Street Address: No. 217, Cotta Road,</p> <p>City: Colombo 08</p> <p>ZIP Code: 00800</p> <p>Country: Sri Lanka</p> <p>Telephone: 011-2674354</p> <p>Facsimile number: 011-2674354</p> <p>Electronic mail address: pd@csrp.lk</p>
ITB 10.2	<p>A site visit will be organized by the Employer. If so, it will be at the following date, time and place:</p> <p>Date:.....September 2018</p> <p>Time: 10.00 a.m</p> <p>Place: Colombo Fort Station ,Colombo, Sri Lanka</p> <p>Bidders may request a site visit under ITB 10.2.</p>

ITB 10.4	<p>A Pre-Bid meeting will take place. If a Pre-Bid meeting will take place, date, time and place are as follows :</p> <p>Insert details below as appropriate.</p> <p>Date: 03 October 2018</p> <p>Time: 10.00 a.m</p> <p>Place: Ministry of Transport and Civil Aviation, 7th Floor, Sethsiripaya Stage II, Battaramulla, Sri Lnaka</p> <p>A site visit conducted by the Employer willbe organized.</p>
-----------------	--

C-1. First Stage Bid Preparation

ITB 16.1	Alternative Bids shall not be permitted
ITB 19.7	The use of specific item brand names and/or standards is not prohibited.
ITB21.5	<p>The Incoterm for quoting Smart Ticketing and Seat Reservation System and/or Services manufactured within the Employer's country is: The Incoterms edition is (<i>"Incoterms 2000 – ICC Official Rules for the Interpretation of Trade Terms"</i> published in September 1999 by the International Chamber of Commerce, 38 Cours Albert 1er, 75008 Paris, France).</p> <p>Note: For the current version of Incoterms consult the ICC website at http://www.iccwbo.org/index_incoterms.asp</p>
ITB21.5(a)	<p>For foreign goods priced on a CIP Colombobasis:</p> <p>(i) The contract of carriage shall include the cost of unloading the Smart Ticketing and Seat Reservation System at destination, as well as payment by the Contractor of the cost of custom formalities, duties, taxes or other charges payable on the foreign IT Products for their transit through any country other than the Employer's country.</p> <p>The named place of destination shall be Colombo</p>
ITB21.8	<p>The prices are adjustable.</p> <p>The formula for adjusting the prices and explanatory details are specified in the Particular Conditions of Contract (PCC) Clause 11.2 and Appendix 12 of the Contract Agreement. Bidder shall fill out the Tables of Adjustment Data in Section 4 (Bidding Forms)</p>
ITB21.11	Bids are not being invited for individual lots (contracts) or for any combination of packages.
ITB22.1	<p>Bid prices shall be quoted in the following currencies:</p> <p>(a) Bidders may express their bid price in any fully convertible currency. If a Bidder wishes to be paid in a combination of amounts in different</p>

	<p>currencies, it may quote its price accordingly but shall use no more than three currencies in addition to the currency of the Employer's country.</p> <p>(b) If some of the expenditures for the Related Services are to be incurred in the borrowing country, such expenditures should be expressed in the Bid and will be payable in the Employer's currency</p>
ITB23.1	The Bid validity period shall be 120 days.
ITB24.1	Bids shall include a Bid Security issued by bank using the form included in Section 4 (Bidding Forms). The amount and currency of the bid security shall be LKR15.000.000.00.
ITB 25.1	In addition to the original copy of the bid, the number of copies is: three (two hard copies and one softcopy)
ITB 25.2	<p>The written confirmation of authorization to sign on behalf of the Bidder shall consist of:</p> <p>An organizational document, board resolution or its equivalent, or power of attorney specifying the representative's authority to sign the Bid on behalf of, and to legally bind, the Bidder. If the Bidder is an intended or an existing Joint Venture, the power of attorney should be signed by all partners and specify the authority of the named representative of the Joint Venture to sign on behalf of, and legally bind, the intended or existing Joint Venture. If the Joint Venture has not yet been formed, also include evidence from all proposed Joint Venture partners of their intent to enter into a Joint Venture in the event of a contract award in accordance with ITB 18.1.</p>

C-2. First Stage Bid Submission and Opening

ITB 26.1	Bidders will not have the option of submitting their bids electronically.
ITB 26.1	<p>For bid submission purposes only, the Employer's address is</p> <p>Attention: Chairman, Standing Cabinet Appointed Procurement Committee, Ministry of Transport and Civil Aviation Street Address: Sethsiripaya Stage II Floor/Room number: 7th Floor, City: , Battaramulla ZIP Code: 10120 Country: , Sri Lanka</p>

	<p>The deadline for bid submission is</p> <p>Date: 30 October 2018</p> <p>Time: 14.00 Hrs (Standard time in Sri Lanka)</p>
ITB 30.1	<p>The bid opening shall take place at Ministry of Transport and Civil Aviation</p> <p>Street Address: Sethsiripaya Stage II</p> <p>Floor/Room number: 7th Floor,</p> <p>City: , Battaramulla</p> <p>ZIP Code: 10120</p> <p>Country: , Sri Lanka</p> <p>Date: 30 October 2018</p> <p>Time: 14.00 Hrs (Standard time in Sri Lanka)</p>
ITB30.5	<p>The letter of Technical bid shall be initialed by all representatives of the Employer attending the Bid opening.</p>

E-1. Second Stage Bid Preparation

ITB 38.1(h)	Not applicable
--------------------	----------------

E-2. Second Stage Bid Submission and Opening

ITB 39.1	Bidders "will not" have the option of submitting their bids electronically.
ITB 39.1 (b)	Not applicable
ITB 43.1	Electronic bid submission is not permitted
ITB43.3	The letter of Price Bid, Letter of Modified Bid, and Price Schedules including Supplementary Price Schedules shall be initialed by all representatives of the Employer attending the Bid opening.

E-3. Second Stage Bid Evaluation and Comparison

ITB 49.1	<p>The currency that shall be used for bid evaluation and comparison purposes to convert all bid prices expressed in various currencies into a single currency is: LKR</p> <p>The source of exchange rate shall be: Central Bank of Sri Lanka</p> <p>The date for the exchange rate shall be: 28 days before the submission deadline of the First Stage Bid Opening</p>
-----------------	---

ITB 50.1	A margin of preference “shall not” apply
ITB 52.5	The Price factor is: 20%
ITB 52.7	The NPV discount rate is: 12 Month Sri Lanka Interbank Offer rate (SLIBOR) declared by the Central bank of Sri Lanka, 28 before the bid opening date per annum.
ITB 56	The Employer reserves the right to vary the quantities in Section 6 (Schedule of Requirements) by plus or minus 15%
ITB 56	<p>The Dispute Adjudication Board shall be comprised of three members.</p> <p>If a dispute arises, the adjudicators shall be selected from the list of adjudicators published by the Institution of Engineers of Sri Lanka.</p> <p>In case the parties do not agree, the appointing authority shall be the President, Institution of Engineers, Sri Lanka.</p>

Section 3 - Evaluation and Qualification Criteria

This Section covers the Evaluation Criteria and Qualification Criteria that the Employer shall use to qualify Bidders and evaluate bids. In accordance with ITB 34, 35, 52 and 54 no other factors, methods or criteria shall be used.

Table of Criteria

Table of Criteria	1
1.1 Responsive Bids	2
1.2 Technical Evaluation [80%]	2
2. Qualification of the Bidder	3
2.1 Eligibility	3
2.1.1 Nationality	3
2.1.2 Conflict of Interest	3
2.1.3 ADB Eligibility.....	3
2.1.4 Government-owned Entity	3
2.1.5 UN Eligibility	3
2.2 Historical Contract Non-Performance	4
2.2.1 History of non-performing contracts.....	4
2.2.2 Pending Litigation	4
2.3 Financial Situation	5
2.3.1 Financial Capability	5
2.3.2 Average Annual Turnover	5
2.3.3 Financial Resources	5
2.4 Experience	6
2.4.1 General Experience	6
2.4.2 Specific Experience	6
2.5 Key Personnel and Details	7
2.6 Subcontractors – Not Applicable	7
2.7 Other Qualification Requirements	Error! Bookmark not defined.
3. Second-Stage Evaluation	8
3.1 Responsive Bids	8
3.2 Technical Evaluation [80%]	8
3.3 Price Evaluation [20%]	8
3.3.1 Quantifiable Deviations and Omissions	8
3.3.2 Time Schedule	9
3.4 Post Qualification (Due Diligence)	9

1. First-Stage Evaluation

1.1 Responsive Bids

The Employer will review all bids submitted to determine whether the bidder is eligible and qualified (as per the criteria in Part 2 of this Section 3) and whether each bid is responsive using the following criteria pursuant to ITB Clause 33.

- (a) The Bidder meets the Qualification Requirements outlined in the Bidder Response Format
- (b) The Bid is substantially complete in that it provides the information outlined in the Bidder Response Format. (Employer assessment)

Only bids that are responsive pursuant to ITB Clauses 32, 33 and 35 will be further considered.

1.2 Technical Evaluation [80%]

The Employer will conduct the Technical Evaluation pursuant to ITB Clause 52 using the following criteria:

- (a) Degree to which the bid meets the mandatory and desirable business requirements in the SOR [5%]
- (b) Degree to which the bid meets the mandatory technical/functional requirements including More Functional and Operational Requirements in the SOR [25%]
- (c) Quality and appropriateness of the Bidder's Preliminary Project Plan including the Implementation Schedule in the SOR [10%]
- (d) Quality and appropriateness of training provided in the SOR [5%]
- (e) Quality of support services in the SOR [10%]
- (f) Experience (Track Record) of the Bidder's organization and specific personnel to be assigned to the project [15%] (in the Bidder's response to the SOR or Forms 2.4.1, 2.4.2, 2.4.3, 2.5.1 and 2.5.2)
- (g) Specific Experience of the Bidder's organization related to the project [10%] (in the Bidder's response to the SOR or Forms 2.4.2(c))

Bids that do not achieve a minimum score of [50%] will not be further considered for evaluation.

2. Qualification of the Bidder

Bidders shall demonstrate they are qualified to bid as part of the bidding process and complete the forms set out Parts 1 and 2 in Table 1 under Bid Submission Form and Qualification of the Bidder. The detailed forms are found in Section 4 Bidding Forms.

2.1 Eligibility

Criteria		Compliance Requirements		Documents
Requirement	Single Entity	Joint Venture		Submission Requirements
		All partners combined	Each partner	

2.1.1 Nationality

Nationality in accordance with ITB 4.2.	must meet requirement	existing or intended JVCA must meet requirement	must meet requirement	must meet requirement	Form 1.1 or 1.2, with attachments if required
---	-----------------------	---	-----------------------	-----------------------	---

2.1.2 Conflict of Interest

No- conflicts of interest as described in ITB 4.3.	must meet requirement	existing or intended JVCA must meet requirement	must meet requirement	must meet requirement	Form 1.1 or 1.2, with attachments if required
--	-----------------------	---	-----------------------	-----------------------	---

2.1.3 ADB Eligibility

Not having been declared ineligible by the Bank as described in ITB 4.4.	must meet requirement	existing or intended JVCA must meet requirement	must meet requirement	must meet requirement	Form 1.1 or 1.2, with attachments if required
--	-----------------------	---	-----------------------	-----------------------	---

2.1.4 Government-owned Entity

Compliance with conditions of ITB 4.5	must meet requirement	must meet requirement	must meet requirement	must meet requirement	Form 1.1 or 1.2, with attachments if required
---------------------------------------	-----------------------	-----------------------	-----------------------	-----------------------	---

2.1.5 UN Eligibility

Not having been excluded as a result of the Borrower's country laws or official regulations, or by an act of compliance with UN Security Council resolution, in accordance with ITB 4.8	must meet requirement	existing or intended JVCA must meet requirement	must meet requirement	must meet requirement	Form 1.1 or 1.2, with attachments if required
---	-----------------------	---	-----------------------	-----------------------	---

2.2 Historical Contract Non-Performance

Criteria		Compliance Requirements		Documents	
Requirement	Single Entity	Joint Venture		Named Sub-Contractor	Submission Requirements
		All partners combined	Each partner		

2.2.1 History of non-performing contracts

Non-performance of a contract did not occur within the last 3years prior to the deadline for bid submission, based on all information on fully settled disputes or litigation. A fully settled dispute or litigation is one that has been resolved in accordance with the Dispute Resolution Mechanism under the respective contract, and where all appeal instances available to the bidder have been exhausted.	Must meet requirement by itself or as partner to past or existing JVCA	N / A	Must meet requirement by itself or as partner to past or existing JVCA	Must meet requirement by itself or as partner to past or existing JVCA	Form 2.2
---	--	-------	--	--	----------

2.2.2 Pending Litigation

All pending litigation shall in total not represent more than 50percent of the Bidder's net worth and shall be treated as resolved against the Bidder.	Must meet requirement by itself or as partner to past or existing JVCA	N / A	Must meet requirement by itself or as partner to past or existing JVCA	Must meet requirement by itself or as partner to past or existing JVCA	Form 2. 7
--	--	-------	--	--	-----------

2.3 Financial Situation

If the bid evaluation process and the decision for the award of the Contract takes more than one (1) year from the date of bid submission, Bidders may be asked to resubmit their current contract commitments and latest information on financial resources supported by latest audited accounts or audited financial statements, or if not required by the law of the Bidder's country, other financial statements acceptable to the Employer, and the Bidders' financial capacity will be reassessed on this basis

Criteria		Compliance Requirements			Documents
Requirement	Single Entity	Joint Venture		Named Sub-Contractor	Submission Requirements
		All partners combined	Each partner		

2.3.1 Financial Capability

Submission of audited balance sheets or if not required by the law of the bidder's country, other financial statements acceptable to the Employer, for the last 5 years to demonstrate the current soundness of the bidder's financial position and its prospective long term profitability. As a minimum, a Bidder's net worth calculated as the difference between total assets and total liabilities should be positive.	Must meet requirement	N / A	Must meet requirement	Must meet requirement	Form 2.3.1 with attachments
---	-----------------------	-------	-----------------------	-----------------------	-----------------------------

2.3.2 Average Annual Turnover

Minimum average annual turnover of 15 Million USD calculated as total certified payments received for contracts in progress or completed, within the last 3 years	Must meet requirement	Must meet requirement	Must meet 25% of the requirement	Must meet 25% of the requirement	Form 2.3.2
---	-----------------------	-----------------------	----------------------------------	----------------------------------	------------

2.3.3 Financial Resources

The Bidder must demonstrate access to, or availability of, financial resources such as liquid assets, unencumbered real assets, lines of credit, and other financial means, other than any contractual advance payments to meet: (i) the following cash-flow requirement: 2 Million USD and (ii) the overall cash flow requirements for this contract which will be over 36 months, and its current commitments.	Must meet requirement	Must meet requirement	Must meet 25% of the requirement	Must meet 25% of the requirement	Form 2.3.3
---	-----------------------	-----------------------	----------------------------------	----------------------------------	------------

2.4 Experience

Criteria		Compliance Requirements		Documents	
Requirement	Single Entity	Joint Venture		Named Sub-Contractor	Submission Requirements
		All partners combined	Each partner		

2.4.1 General Experience

Experience under contracts in the role of contractor, subcontractor, or management contractor for at least the last 7 years prior to the bid submission deadline, and with activity in at least six (6) months in each year.	Must meet requirement	N / A	Must meet requirement	N / A	Form 2.4.1
--	-----------------------	-------	-----------------------	-------	------------

2.4.2 Specific Experience

(a) Participation as contractor, management contractor, or subcontractor, in at least 2 contracts within the last 5 years each with a value of at least 12 Million USD that have been successfully and substantially completed and that are similar to the proposed Railway Smart Ticketing and Seat Reservation System Products, Software and /or Services. The similarity shall be based on the physical size, complexity, methods/technology or other characteristics as described in Section VI, Schedule of Requirements.	Must meet requirement	Must meet requirements for all characteristics	N / A	N/A	Form 2.4.2
(b) For the above or other contracts executed during the period stipulated in 2.4.2 (a) above, a minimum experience in the following key activities in Railway Ticketing and Seat Reservation System: <ul style="list-style-type: none"> • System Design • Mobile Application Development • Installation & Commissioning • Maintenance Support Services 	Must meet requirements	Must meet requirements	N / A	N/A	Form 2.4.3
(c) For the above or other contracts executed during the period stipulated in 2.4.2 (a) above, shall consist of <ul style="list-style-type: none"> • Railway Station ticket issuance (counter and ticket vending machines) • Railway Seat Reservation System • Railway Mobile Ticketing • Railway Web based ticket issuance • Integration of payment gateways (Credit Card, Mobile Money, Pay as You Go, Mobile Banking) 	Must meet requirements	Must meet requirements	N/A	N/A	

2.5 Key Personnel and Details

The Bidder must demonstrate that it has the personnel for the key positions that meet the following requirements:

No.	Position	Total Work Experience [years]	Experience In Similar Work [years]
1	<i>Project Manager</i>	15	10
2	<i>AFC Systems Analysts / Architects</i>	12	10
3	<i>Mobile Application Developer</i>	12	10
4	<i>IT Infrastructure Experts</i>	12	10
5	<i>Hardware Design Engineer</i>	12	10
6	<i>Test Engineer</i>	10	8
7	<i>Training Manager</i>	10	8
8	<i>Ticketing and Seat Reservation System Developers</i>	10	8

The Project Team must include expertise and experience in the following disciplines:

- Automatic Fare Collection systems and mobile ticketing in railways
- Mobile Application Development
- Project Management
- System Requirements capture
- Systems Analysis
- Large Database Systems Design and implementation
- System Security
- Testing and System Integration
- IT Infrastructure implementation, operations and maintenance
- Training and human resource management and development
- Change management

This information is to be entered on Forms 2.5.1 and 2.5.2 found in Section IV Bidding Forms

2.6 Subcontractors – *Not Applicable*

Subcontractors/manufacturers for the following major items of supply or services must meet the following minimum criteria, herein listed for that item. Failure to comply with this requirement will result in rejection of the subcontractor.

Item No.	Description of Item	Minimum Criteria to be met
1		
2		
3		
4		
5		

In the case of a Bidder who offers to supply and install major items of supply under the contract that the Bidder did not manufacture or otherwise produce, the Bidder shall provide the manufacturer's authorization, using the form provided in Section 4 (Bidding Forms), showing that the Bidder has been duly authorized by the manufacturer or producer of the related plant and equipment or component to supply and install that item in the Employer's country. The Bidder is responsible for ensuring that the manufacturer or producer complies with the requirements of ITB 4 and 5 and meets the minimum criteria listed above for that item.

3. Second-Stage Evaluation

3.1 Responsive Bids

The Employer will review all bids submitted to determine whether the bidder remains eligible (as per the criteria in Part 2 of this Section 3) and whether each bid continues to be responsive using the following criteria pursuant to ITB Clause 33 and 46.

- (a) The Bidder meets the Qualification Requirements outlined in the Bidder Response Format
- (b) The Bid is substantially complete in that it provides the information outlined in the Bidder Response Format.(Employer assessment)

Only bids that remain responsive will be further considered.

3.2 Technical Evaluation [80%]

The Technical Evaluation of First Stage Bids will be amended in accordance with the revised technical aspects of Second Stage Bids.

3.3 Price Evaluation [20%]

The Lowest Evaluated Bid Price (Adjusted Bid Price plus the Recurrent Costs) will be identified by the Employer pursuant to ITB Clause 51 based on the following criteria:

The Adjusted Bid Price will be calculated as follows:

- (a) Price of Smart Ticketing and Seat Reservation System and/or Services Provided and Installed
- (b) Price of Smart Ticketing and Seat Reservation System Support Services
- (c) Adjustments made for:
 - (i) Products/Services omitted
 - (ii) Non- conformities
 - (iii) Arithmetic corrections
 - (iv) Conversions to a single currency
 - (v) Net Present Value of Recurrent Costs

The Price Schedules in which the above information must be presented are shown in Part 6 of the Bidder Response Format and the details of individual Forms are found in Section IV Bidding Forms.

3.3.1 Quantifiable Deviations and Omissions

Quantifiable Deviations and Omissions from the contractual obligations: the evaluation shall be based on the evaluated cost of fulfilling the contract in compliance with all

contractual obligations under this bidding document. The Employer will assess the cost of such a deviation for the purpose of ensuring fair comparison of bids.

3.3.2 Time Schedule

Time to deliver the Smart Ticketing and Seat Reservation System and/or Services from the effective date specified in Article 3 of the Contract Agreement for determining time for completion of pre-commissioning activities is: 36 months. No credit will be given for earlier completion.

3.4 Post Qualification (Due Diligence)

Pursuant to ITB Clause 54, the Employer may at its own expense, require the Bidder with the Lowest Evaluated Bid to provide the further information on request to substantiate claims and information included in its bid. This information may be subject to audit and review by the Employer and may involve site visits.

SECTION IV: BIDDING FORMS

DO NOT COPY

Table of Contents and Forms

Table of Contents and Forms	2
Bidder's Response Format (BRF).....	4
1. BID SUBMISSION FORMS - FIRST STAGE BID.....	5
1.1 Letter of Technical Bid – Two Stage Two Envelope Bidding, First Stage Bid	7
1.2 Letter of Price Bid – Two Stage Two Envelope Bidding, First Stage Bid	9
1.3 Bid Security (Bank Guarantee)	11
1.4 Written Confirmation Authorizing the Signatory.....	13
1.5 Manufacturer's Authorization.....	14
1.6 Bidders Price Schedules.....	15
1.6.1 Railway Ticketing and Seat Reservation Products and/or Services Included Table	15
1.6.2 System Support Services Table.....	17
1.6.3 Recurrent Costs Table	18
1.6.4 Grand Summary Costs Table.....	19
1.6.5 Country of Origin Code Table	20
2. Qualification of the Bidder	21
2.1 Bidder Information Sheet	21
2.2 Historical Contract Non Performance	23
2.3.1 Financial Capability	24
2.3.2 Average Annual Turnover	26
2.3.3 Financial Resources.....	27
2.4.1 General Experience in Information Products and/or Services	28
2.4.2 Specific Experience in Contracts of a Similar Nature	29
2.4.3 Specific Experience in Key Nominated Activities.....	30
2.4.4 Specific Experience in Key Module Implementation	31
2.5.1 Key Personnel.....	32
2.5.2 Key Personnel Details.....	33
2.6 Current Contract Commitments/Work in Progress.....	34
2.7 Litigation History.....	35
3. Bidder's Response to the Schedule of Requirements	36
3.1 Bidder's Response to the Schedule of Requirements	36
3.2 Technical Capabilities	43
4. Other Bid Forms and Lists.....	44
4.1 List of Proposed Subcontractors/Manufactures	45
4.2 Software List.....	46
4.3 List of Custom Documentation	47
4.4 Confirmation of Full Responsibility.....	48
4.5 Other Required Information.....	49
5. BIDDING FORMS - SECOND STAGE BID	50
5.1 Letter of Modified Bid – Two Stage Two Envelope Bidding, Second Stage Bid	52
Dated on day of_,	54
6. Bidder's Amended Eligibility and Qualifications	55
6.1 Bidder's Amended Eligibility and Qualifications	55
7. Bidder's Response to the Revised Schedule of Requirements.....	56
7.1 Bidder's Response to the Revised Schedule of Requirements	56
7.2 Amended Technical Capabilities.....	57
8. Guarantees and Declarations	58
8.1 Extended Bid Security (If applicable)	58
8.2 Manufacturer's Authorization (If applicable).....	59

9.	Other Bid Forms and Lists	60
9.1	Amended List of Proposed Subcontractors	61
9.2	Amended Software List	62
9.3	Amended List of Custom Documentation	63
9.4	Other Required Information.....	64
10.	Bidder’s Modified/Supplemental Price Schedule	65
10.1	Railway Ticketing and Seat Reservation Products and/or Services Included Table-Modified Bid.....	66
10.2	System Support Services Table-Modified Bid.....	67
10.3	Recurrent Costs Table - Modified Bid	68
10.4	Grand Summary Costs Table - Modified Bid	69
10.5	Country of Origin Code Table - Modified Bid	70
10.6	Price Adjustment Table (if applicable)	71

DO NOT COPY

Bidder's Response Format (BRF)

Bidders must use the BRF structure outlined in Table 1 (First Stage Bids) and Table 2 (Second Stage Bids) in their bids. Bidders should expand and (if appropriate) modify and complete the following table. The purpose of the table is to provide the Bidder with a summary checklist of items that must be included in the bid as described in ITB Clauses 26.1 and 39.1, in order for the bid to be considered for Contract award. The table also provides a summary page reference scheme to ease and speed the Employer's bid evaluation process.

1. BID SUBMISSION FORMS - FIRST STAGE BID

Table 1: Bidder Response Format – First Stage Bid

Order in Bid	Document Number and Information Required	Check Y/N	Page No.
1.	Bidder's Front Page (Bidder's name. Bid details)		
2.	Bidder's Response Format (as a table of contents/checklist)		
	1. Bid Submission Form		
3.	1.1 Letter of Technical Bid – Two Stage Two Envelope Bidding, First Stage Bid		
4.	1.2 Letter of Price Bid – Two Stage Two Envelope Bidding, First Stage Bid		
5.	1.3 Bid Security (Bank Guarantee)		
6.	1.4 Written confirmation authorizing the signatory of the Bid to commit the Bidder (ITB 25.2)		
7.	1.5 Manufacturer's Authorization		
8.	1.6 Bidder's Price Schedules		
9.	1.6.1 Railway Ticketing and Seat Reservation Products and/or Services Provided and Installed Table		
10.	1.6.2 System Support Services Table		
11.	1.6.3 Recurrent Costs Table		
12.	1.6.4 Grand Summary Costs Table		
13.	1.6.5 Country of Origin Code Table		
	2. Qualification of the Bidder		
14.	2.1 Bidder Information Sheet		
15.	2.2 Historical Contract Non Performance		
16.	2.3.1 Financial Capability		
17.	2.3.2 Average Annual Turnover		
18.	2.3.3 Financial Resources		
19.	2.4.1 General Experience in Railway Ticketing and Seat Reservation Products and/or Services		
20.	2.4.2 Specific Experience in Contracts of a Similar Nature		
21.	2.4.3 Specific Experience in Key Nominated Activities		
22.	2.5.1 Key Personnel		
23.	2.5.2 Key Personnel Details		
24.	2.6 Current Contract Commitments/Work in Progress		
25.	2.7 Litigation History		

Order in Bid	Document Number and Information Required	Check Y/N	Page No.
	3. Bidder's Response to the Schedule of Requirements		
26.	3.1 Bidder's Response to the Schedule of Requirements		
27.	3.2 Technical Capabilities		
	4. Other Bid Forms and Lists		
28.	4.1 List of Proposed Subcontractors		
29.	4.2 Software List		
30.	4.3 List of Custom Materials		
31.	4.4 Confirmation of Full Responsibility		
32.	4.5 Other Required Information		

[Employer to prepare list of appropriate forms and modify format for Table 1 to cover the Qualification and Evaluation intended.]

1.1 Letter of Technical Bid – Two Stage Two Envelope Bidding, First Stage Bid

Date: [Bidder: **date of bid**]
IFB: [Employer: **IFB title and number**]
Contract: [Employer: **name of Contract**]

To: _____

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Document, including Addenda issued in accordance with Instructions to Bidders (ITB) 11.
- (b) We offer to [Employer to insert the IT Products and /or Services that apply], in conformity with the Bidding Document.
- (c) Our bid shall be valid for a period of [X] days from the date fixed for the submission deadline for the Second Stage bids as stipulated in the Letter of Invitation to submit a Second Stage Bid, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (d) If our bid is accepted, we commit to obtain a performance security in accordance with the Bidding Document.
- (e) We undertake, if our bid is accepted, to commence work on the Information Products and/or Services and to achieve Installation and Operational Acceptance within the respective times stated in the Bidding Documents.

[Bidder, as appropriate, include or delete the following paragraph and then subsequently include or delete paragraph below it as appropriate]

- (f) "We accept the appointment of [Employer: **name of proposed Adjudicator from the Bid Data Sheet**] as the Adjudicator.
- (g) "We do not accept the appointment of [Employer: **name of proposed Adjudicator from the Bid Data Sheet**] as the Adjudicator, and we propose instead that [: **name**] be appointed as Adjudicator, whose résumé and hourly fees are attached."
- (h) We hereby certify that all the Software offered in this bid and to be supplied under the Contract (i) either is owned by us, or (ii) if not owned by us, is covered by a valid license from the proprietor of the Software.
- (i) We, including any subcontractors or manufacturers for any part of the contract, have or will have nationalities from eligible countries, in accordance with ITB-4.2.
- (j) We, including any subcontractors or manufacturers for any part of the contract, do not have any conflict of interest in accordance with ITB-4.3.

- (k) We are not participating, as a Bidder or as a subcontractor, in more than one bid in this bidding process in accordance with ITB-4.3, other than alternative bids submitted in accordance with ITB-16.
- (l) We, including any of our subcontractors or manufacturers for any part of the contract, have not been declared ineligible by the Bank, under the Employer 's country laws or official regulations or by an act of compliance with a decision of the United Nations Security Council;
- (m) *We are not a government owned entity or We are a government owned entity but meet the requirements of ITB-4.5;¹*
- (n) We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract:

Name of Recipient	Address	Reason	Amount
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(If none has been paid or is to be paid, indicate "none.")

- (o) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed; and
- (p) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.

Name _____ In the capacity of _____

Signed _____

Duly authorized to sign the bid for and on behalf of _____

Dated on _____ day of _____, _____

¹ *Bidder to use as appropriate*

1.2 Letter of Price Bid – Two Stage Two Envelope Bidding, First Stage Bid

- Note -

The bidder must accomplish the Letter of Price Bid on its letterhead clearly showing the bidder's complete name and address.

Date:

ICB No.:

Invitation for Bid No.:

To:[. . . insert complete name of the employer . . .]

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Document, including Addenda issued in accordance with Instructions to Bidders (ITB) 11.
- (b) We offer to design, manufacture, test, deliver, install, pre-commission, and commission in conformity with the Bidding Document the following Railway Ticketing and Seat Reservation Products and/or Services:[. . . insert narrative . . .]
- (c) The total price of our Bid, excluding any discounts offered in item (d) below is the sum of

[amount of foreign currency in words], [amount in figures], and [amount of local currency in words], [amount in figures]

The total bid price from the Grand Summary (Schedule No. 5) should be entered by the Bidder inside this

- (d) The discounts offered and the methodology for their application are as follows:[. . . insert discounts and methodology for their application if any . . .]
- (e) We offer our bid to be valid for a period of [. . . insert bid validity period as specified in ITB 23.1 of the BDS . . .]days from the date fixed for the submission deadline for the Second-Stage bids as stipulated in the Letter of Invitation to submit a Second-Stage Bid, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
- (f) If our bid is accepted, we commit to obtain a performance security in accordance with the Bidding Document.

(g) We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract: ²

Name of Recipient	Address	Reason	Amount
.....
.....

- (h) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed.
- (i) We agree to permit ADB or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by ADB.
- (j) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
- (k) If our Bid is accepted, we commit to mobilizing key equipment and personnel in accordance with the requirements set forth in Section 6 (Employer’s Requirements) and our technical proposal, or as otherwise agreed with the Employer.

Name

In the capacity of

Signed

Duly authorized to sign the Bid for and on behalf of

² If none has been paid or is to be paid, indicate “None.”

Date

.....
.....

Guarantees and Declarations

1.3 Bid Security (Bank Guarantee)

[Bank's Name, and Address of Issuing Branch or Office]

Beneficiary: *[Name and Address of Employer]*

Date: _____

BIDGUARANTEE No.: _____

We have been informed that *[name of the Bidder]* (here in after called "the Bidder") has submitted to you its bid dated (here in after called "the Bid") for the execution of *[name of contract]* under Invitation for Bids No. _____ ("the IFB").

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee.

At the request of the Bidder, we *[name of Bank]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of _____ *[amount in figures]*

(_____) *[amount in words]* up on receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- (a) has withdrawn its Bid during the period of bid validity specified by the Bidder in the Form of Bid; or
- (b) having been notified of the acceptance of its Bid by the *Employer* during the period of bid validity, (i) fails or refuses to execute the Contract Form, if required, or (ii) fails or refuses to furnish the performance security, in accordance with the ITB.

This guarantee will expire: (a) if the Bidder is the successful Bidder, upon our receipt of copies of the contract signed by the Bidder and the performance security issued to you upon the instruction of the Bidder; and(b) if the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy your notification to the Bidder of the name of the successful Bidder; or(ii) twenty-eight days after the expiration of the Bidder's bid.

Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No.458.

[signatures]

Note: All italicized text is for use in preparing this form and shall be deleted from the final product.

1.4 Written Confirmation Authorizing the Signatory

1.5 Manufacturer's Authorization

Invitation for Bids Title and No.:

[If applicable:] Lot, Slice, Product and/ or Service No (s):

To: _____ WHEREAS _____ who are official producers of _____
 _____ and having production facilities at _____
 authorize located at _____
 (hereinafter, the "Bidder") to submit a bid and subsequently negotiate and sign a Contract with you for
 resale of the following Products and/or Services produced by us:

We hereby confirm that, in case the bidding results in a Contract between you and the Bidder, the
 above- listed products will come with our full standard warranty/license.

Name _____ In the capacity _____
 of _____

Signed _____

Duly authorized to sign the authorization for and on behalf of: _____

Dated on day of __, __.

Note: This authorization should be written on the letterhead of the Manufacturer and be signed by a
 person with the proper authority to sign documents that are binding on the Manufacturer.

Manufacturer's Authorizations for Railway Ticketing Seat Reservation Technologies—except for those
 technologies which the Bidder itself manufactures—are required for the following types /categories:
[specify, for example: "none"/"all"/"all active (i.e. powered) equipment and all software"].

1.6 Bidders Price Schedules

1.6.1 Railway Ticketing and Seat Reservation Products and/or Services Included Table

Lot number: *[if a multi-lot procurement][Modify as necessary for supply, installation, and achieving Operational Acceptance of the specific items in the Table below, modifying, deleting, or expanding the line items. To assist Bidders to provide uniform costing and presentation Employers may number and describe items and sub items to be provided as required]*

Costs MUST reflect prices and rates quoted in accordance with ITB Clauses 19 and 20. Bidders shall enter a code representing the country of origin of all imported plant and equipment.

Item	Product and /or Service Item Description	Country of Origin Code	Qty.	Unit Prices / Rates			Total Price			
				Supplied Locally	Supplied from outside the Employer's Country		Supplied Locally	Supplied from outside the Employer's Country		
				<i>[local currency]</i>	<i>[local currency]</i>	<i>[foreign currency]</i>	<i>[local currency]</i>	<i>[local currency]</i>	<i>[foreign currency]</i>	
1	SLR STO equipment		660							
2	3rd Party Retailers Equipment		500							
3	Ticket Vending Machines (TVM)		52							
4	Hand Held Bar Code Reader		900							
5	On-Board Distribution Equipment		100							
6	Ticket Selling Website		1							
7	Customer Mobile App		1							
8	Gates		50							
9	Platform Validators		771							
10	Parcel and Luggage Tracking Station Equipment		150							
11	Ticketing system Back Office		1							
12	Luggage and Parcel Tracking back office		1							
13	Installation & commissioning									
14	Training, Training Equipment and Documents (Sec VI-5.6)									
Total Prices: Products and /or Services (for entry in Grand Summary Cost Table)										

Name of Bidder	Authorized Signature of Bidder:
:	

1.6.2 System Support Services Table

Lot number: *[if a multi-lot procurement]Modify as necessary for to identify all the support services for IT hardware and /or software in the Table below, by deleting, or expanding the line items. To assist Bidders in making uniform costing and presentation Employers may number and describe items and sub items to be provided as required]*

Costs MUST reflect prices and rates quoted in accordance with ITB Clauses 19 and 20

Item	System Support Service Item/Sub-item Description	Qty.	Unit Prices / Rates			Total Price		
			Supplied Locally	Supplied from outside the Employer's Country		Supplied Locally	Supplied from outside the Employer's Country	
			<i>[local currency]</i>	<i>[local currency]</i>	<i>[foreign currency]</i>	<i>[local currency]</i>	<i>[local currency]</i>	<i>[foreign currency]</i>
Total Prices: System Support Services (for entry in Grand Summary Cost Table)								

Name of Bidder	Authorized Signature of Bidder:
	:

1.6.3 Recurrent Costs Table

Lot number: *[if a multi-lot procurement]*

Costs MUST reflect prices and rates quoted in accordance with ITB Clauses 19 and 20. Unit prices for the same item appearing several times in the table must be identical in amount and currency.

Item	Recurrent Item	Maximum all-inclusive Costs								
		Warranty Period			Post-Warranty Service Period				Prices	
		Y1	Y2	Y3	Y4	...	Y8	Local Currency	Foreign Currency	
1	Maintenance and Performance Management									
	Annual Subtotals:									
Total Prices: Cumulative Recurrent (for entry in Grand Summary Cost Table)										

Name of Bidder	Authorized Signature of Bidder:
:	

1.6.4 Grand Summary Costs Table

Table	Price Component	Total ¹	
		[Local Currency] Price	[Foreign Currency] Price
6.1	Products and/or Services Provided and Included		
6.2	System Support Services		
6.3	Recurrent		
	Other		
GRAND TOTALS to be carried forward to Letter of Bid – Two Stage Bidding, Second Stage Bid			

Name of Bidder _____

Signature of Bidder _____

¹Specify currency in accordance with Bid Data Sheet 19.1. Create and use as many columns for Foreign Currency requirement as there are foreign currencies

1.6.5 Country of Origin Code Table

Country of Origin	Country Code		Country of Origin	Country Code		Country of Origin	Country Code

Name of Bidder	Authorized Signature of Bidder:
:	

2. Qualification of the Bidder

2.1 Bidder Information Sheet

All Bidders whether they be individual firms, each partner of a Joint Venture, and a named, Sub-contractor(s) for highly specialized components of the Products and/or Services, which are bidding, must complete the information in this form. All Bidders that complete this sheet should also complete the further Qualification Forms provided in this section.

Date: _____

ICB No.: _____

Invitation for Bid No.: _____

Page _____ of _____ pages

Please note that a written authorization needs to be attached to this sheet as required by ITB 24.2.

<input type="checkbox"/> Bidder's Information	
Bidder's legal name	
In case of JV, legal name of each partner	
Bidder's actual or intended country of registration	
Bidder's year of registration	
Bidder's legal address in country of registration	
Bidder's authorized representative <small>(name, address, telephone numbers, fax numbers, e-mail address)</small>	

Attached are copies of the following original documents.

- 1. In case of single entity, articles of incorporation or constitution of the legal entity named above, in accordance with ITB 4.1 and 4.2.
- 2. Authorization to represent the firm or JV named in above, in accordance with ITB 25.2.
- 3. In case of JV, letter of intent to form JV or JV agreement, in accordance with ITB 4.1.
- 4. In case of a government-owned entity, any additional documents not covered under 1 above required to comply with ITB 4.5.

2.2 Historical Contract Non Performance

Bidder's Legal Name: _____

Date: _____

JVCA Partner Legal Name: _____

ICB No.: _____

Page _____ of _____ pages

Non-Performing Contracts in accordance with Section III, Evaluation & Qualification Criteria			
<input type="checkbox"/> <input type="checkbox"/> Contract non-performance did not occur during the stipulated period, in accordance with Sub-Factor 2.2.1 of Section III, Evaluation & Qualification Criteria			
<input type="checkbox"/> <input type="checkbox"/> Contract non-performance did occur during the stipulated period, in accordance with Sub-Factor 2.2.1 of Section III, Evaluation & Qualification Criteria, as indicated below:			
Year	Outcome as Percent of Total Assets	Contract Identification	Total Contract Amount (current value, US\$ equivalent)
		Contract Identification: Name of Employer : Address of Employer : Matter in dispute:	
		Contract Identification: Name of Employer : Address of Employer : Matter in dispute:	
		Contract Identification: Name of Employer : Address of Employer : Matter in dispute:	

2.3.1 Financial Capability

To be completed by the Bidder and, if JVCA, by each partner or Named Subcontractor as appropriate to demonstrate that they meet the requirements stated in the BDS.

Bidder's Legal Name: _____ Date: _____

JVCA Partner Legal Name: _____ ICB No.: _____

Named Sub-contractor Legal Name _____ Page _____ of _____ pages

Financial Data for Previous 3 Years [US\$ Equivalent]				
Year 1:	Year 2:	Year 3:	Year 4:	Year 5:

Information from Balance Sheet

Total Assets					
Total Liabilities					
Net Worth					
Current Assets					
Current Liabilities					

Information from Income Statement

Total Revenues					
Profits Before Taxes					
Profits After Taxes					

- Attached are copies of financial statements (balance sheets including all related notes, and income statements) for the last three years, as indicated above, complying with the following conditions.
- All such documents reflect the financial situation of the Bidder or partner to a JV, and not sister or parent companies.
 - Historic financial statements must be audited by a certified accountant.
 - Historic financial statements must be complete, including all notes to the financial statements.
- Historic financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

Name of banker	
Address of banker	
Tel:	Contact name and title
Fax:	Email:

2.3.2 Average Annual Turnover

Bidder's Legal Name: _____

Date: _____

JVCA Partner Legal Name: _____

ICB No.: _____

Named Sub-contractor Legal Name _____

Page _____ of _____ pages

Annual Turnover Data (IT Products and Services only)			
Year	Amount Currency	Exchange Rate	US\$ Equivalent
Average Annual Turnover*			

*Average annual turnover calculated as total certified payments received for work in progress or completed, divided by the number of years specified in Section III, Evaluation & Qualification Criteria, Sub-Factor 2.3.2.

2.3.3 Financial Resources

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total cash flow demands of the subject contract or contracts as indicated in Section III, Evaluation and Qualification Criteria

Financial Resources		
No.	Source of financing	Amount (US\$ equivalent)
1		
2		
3		

2.4.1 General Experience in Information Products and/or Services

All individual firms and all partners of a Joint Venture and Named Subcontractors must complete the information in this form with regard to the management of Information Products and/or Services contracts generally.

General Experience			
Starting and Ending Month/Year	Years	Contract Identification	Role of Bidder
		Contract name: Brief Description of the Products/Services supplied by the Bidder: Name of <i>Employer</i> : Address: Email: Telephone:	
		Contract name: Brief Description of the Products/Services supplied by the Bidder: Name of <i>Employer</i> : Address: Email: Telephone:	
		Contract name: Brief Description of the Products/Services supplied by the Bidder: Name of <i>Employer</i> : Address: Email: Telephone:	
		Contract name: Brief Description of the Products/Services supplied by the Bidder: Name of <i>Employer</i> : Address: Email: Telephone:	

2.4.2 Specific Experience in Contracts of a Similar Nature

Use a separate sheet for each contract.

Contract of Similar Size and Nature		
Contract No of	Contract Identification	
Award Date	Completion Date	
Role in Contract	<input type="checkbox"/> Contractor <input type="checkbox"/> Management Contractor <input type="checkbox"/> Joint Venture Partner <input type="checkbox"/> Subcontractor	
Total Contract Amount	US\$	
If partner in a JV or subcontractor, specify participation of total contract amount	Percent of Total	Amount
	Performance Contract was completed ____ months ahead/behind original schedule (if behind, provide explanation). Contract was completed US\$ _____ equivalent under/over original contract amount (if over, provide explanation).	
Subcontracting	Approximate percent of total contract value undertaken by subcontract: ____ % Nature of the subcontracted Information Products and/or Services:	
Employer's Name Address Telephone/Fax Number E-mail		
Description of the similarity in accordance with Criteria 2.4.2(a) of Section 3		
Nature of Smart Ticketing and Seat Reservation Products and/or Services involved and special features relevant to the contract for which these Bidding Documents are issued	Special contractual/technical expertise provided.	

2.4.3 Specific Experience in Key Nominated Activities

Contract of Similar Size and Nature		
Contract No of	Contract Identification	
Award Date	Completion Date	
Role in Contract	<input type="checkbox"/> Contractor <input type="checkbox"/> Management Contractor <input type="checkbox"/> Subcontractor	
Total Contract Amount	US\$	
If partner in a JV or subcontractor, specify participation of total contract amount	Percent of Total	Amount
Employer's Name Address Telephone/Fax Number E-mail		
Description of the similarity in accordance with Criteria 2.4.2(b) of Section 3		
<i>Description of the key activities in accordance with those nominated by the Employer in 2.4.2(b) of Section III:</i>	<i>Description of the specific experience:</i>	

2.4.4 Specific Experience in Key Module Implementation

Contract of Similar Size and Nature		
Contract No of	Contract Identification	
Award Date	Completion Date	
Role in Contract	<input type="checkbox"/> Contractor <input type="checkbox"/> Management Contractor <input type="checkbox"/> Subcontractor	
Total Contract Amount	US\$	
If partner in a JV or subcontractor, specify participation of total contract amount	Percent of Total	Amount
	Employer's Name Address Telephone/Fax Number E-mail	
Description of the similarity in accordance with Criteria 2.4.2(c) of Section 3		
<i>Description of the key modules in accordance with those nominated by the Employer in 2.4.2(c) of Section III:</i>	<i>Description of the specific experience:</i>	

2.5.1 Key Personnel

For specific positions essential to contract management and implementation (and/or those specified in the Bidding Documents, if any), Bidders should provide the names of at least two candidates qualified to meet the specified requirements stated for each position. The data on their experience should be supplied on separate sheets using one form for each candidate.

Bidders may propose alternative management and implementation arrangements requiring different key personnel, whose experience records should be provided.

1.	Title of position*
	Name of prime candidate
	Name of alternate candidate
2.	Title of position*
	Name of prime candidate
	Name of alternate candidate
3.	Title of position*
	Name of prime candidate
	Name of alternate candidate
4.	Title of position*
	Name of prime candidate
	Name of alternate candidate
5.	Title of position*
	Name of prime candidate
	Name of alternate candidate
6.	Title of position*
	Name of prime candidate
	Name of alternate candidate
7.	Title of position*
	Name of prime candidate
	Name of alternate candidate
8.	Title of position*
	Name of prime candidate
	Name of alternate candidate

2.5.2 Key Personnel Details

Position		Candidate <input type="checkbox"/> Prime <input type="checkbox"/> Alternate	
Personnel information	Name	Date of birth	
	Professional qualifications		
Present employment	Name of employer		
	Address of employer		
	Telephone	Contact (manager / personnel officer)	
	Fax	E-mail	
	Job title of candidate	Years with present employer	

Summarize professional experience over the last twenty years, in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

From	To	Company / Project / Position / Relevant technical and management experience

2.6 Current Contract Commitments/Work in Progress

Bidders and each partner to a Joint Venture bid and Named Subcontractor(s) should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

Current Contract Commitments					
No.	Name of Contract	Employer, Contact Address, Tel, Fax	Value of Outstanding Information Products and/or Services [Current USD Equivalent]	Estimated Completion Date	Average Monthly Invoicing Over Last Six Months [US\$/month]
1					
2					
3					
4					
5					

2.7 Litigation History

Bidders, including each of the partners of a Joint Venture, shall provide information on any history of litigation or arbitration resulting from contracts executed in the last five years or currently under execution. A separate sheet should be used for each partner of a Joint Venture.

Pending Litigation			
<input type="checkbox"/> <input type="checkbox"/> No previous or pending litigation in accordance with Criteria 2.2 of Section 3 (Evaluation and Qualification Criteria)			
<input type="checkbox"/> Previous or pending litigation in accordance with Criteria 2.2 of Section 3 (Evaluation and Qualification Criteria)			
Year	Award FOR or AGAINST Bidder	Name of client, cause of litigation, and matter in dispute	Disputed amount (current value, US\$ equivalent)

3. Bidder's Response to the Schedule of Requirements

3.1 Bidder's Response to the Schedule of Requirements

Compliance Matrix					
No	Specific Requirement No	Description	Compliance Yes / No	Comments	Reference Page No on Bidders Response
5.1 Business Requirements					
1	1(a)	Business Function – Ticketing System			
2	1(b)				
3	1(c)				
4	1(d)				
5	1(e)				
6	1(f)				
7	1(g)				
8	2(a)	Business Function – Ticketing System			
9	2(b)				
10	2(c)				
11	2(d)				
12	2(e)				
13	2(f)				
14	2(g)				
15	3(a)	Performance Requirements			
16	3(b)				
17	3(c)				
18	3(d)				
19	3(e)				
5.2 Technical Requirements					
20	1	I RTRS system General Requirements			
21	2				
22	3				
23	4				
24	5				
25	1	ii Media			
26	2				

27	2.1	Paper Ticket – Secured Paper			
28	2.2				
29	2.3				
30	2.4				
31	2.5				
32	3	PoS Thermal Paper Ticket – Unsecured Paper			
33	3.1				
34	3.2				
35	3.3				
36	4	Hand Held Terminal Thermal Paper Ticket			
37	4.1				
38	5	Home Printed Ticket			
39	5.1				
40	5.2				
41	6	Mobile Ticket			
42	6.1				
43	6.2				
44	6.3				
45	6.4				
46	7	Smart Card			
47	7.1				
48	7.2				
49	7.3				
50	8	Penalty Notice			
Iii Central System					
51	9	System Overview			
52	10	Inventory module			
53	11	Fare policy management module			
54	12	Booking Module			
55	13	Data Collection and Reporting Module			

56	14	Front-office equipment supervision module			
57	15	Customer and profile management module			
58	16	Journey Planning Module			
59	17	Price Engine Module			
60	18	Clearing and Settlement Module			
61	19	Administration Module			
62	20	Accounting Module			
63	21	Manual Ticket Entry Module			
64	22	Parcel and Luggage Tracking			
65	23	Non-Functional Requirements			
66	23.1				
67	23.2				
68	23.3				
69	23.4				
70	23.5				
71	23.6				
Iv Online Ticket Selling Website					
72	24	System Overview			
73	25	Functional Requirements			
74	25.1				
75	25.2				
76	25.3				
77	25.4				
78	25.5				
79	25.6				
80	26	Non-Functional Requirements			
81	26.1				

82	26.2				
83	26.3				
84	26.4				
85	26.5				
86	26.6				
87	26.7				
V Mobile Phone Application System Requirements					
88	27	System Overview			
89	28	User Scenarios			
90	29	Functional Requirements			
91	29.1				
92	29.2				
93	29.3				
94	29.4				
95	29.5				
96	29.6				
97	30	Non-Functional Requirements			
98	30.1				
99	30.2				
100	30.3				
VI Front Office Equipment					
101	31	Overview			
102	32	Point of Sale Equipment			
103	32.1				
104	32.2				
105	32.3				
106	32.4				
107	32.5				
108	32.6				
109	32.7				
110	32.8				
111	32.9				
112	33	Non-Functional Requirements			
113	33.1				
114	33.2				

115	33.3				
116	33.4				
VII Validation and Inspection					
117	34	Overview			
118	35	Functional Requirements			
119	35.1				
120	35.2				
121	35.3				
122	35.4				
123	35.5				
124	35.6				
125	35.7				
126	36	Non-Functional Requirements			
127	36.1				
128	36.2				
129	36.3				
130	36.4				
VIII Ticket Vending Machines					
131	37	Functional Requirements			
132	37.1				
133	37.2				
134	37.3				
135	37.4				
136	38	Non-Functional Requirements			
137	38.1				
138	38.2				
139	38.3				
IX Parcel and Luggage Tracking					
140	39	Functional Requirements			
141	39.1				
142	39.2				
143	39.3				
144	39.4				
145	40	Non-Functional Requirements			
146	40.1				
147	40.2				

X Gates and Validators					
148	41	Overview			
149	42	Functional Requirements			
150	42.1				
151	42.2				
152	42.3				
153	42.4				
154	42.5				
155	43		Non-Functional Requirements		
156	43.1				
157	43.2				
158	43.3				
5.3 Operational Requirements					
159	44.1	Ticket sales			
160	44.2	System enquiries			
161	44.3	Availability & Reliability			
162	44.4	Requirements			
5.4 Implementation Requirements					
163	1	Acceptance			
164	2	Acceptance Testing			
165	3	Implementation Schedule			
166	4	Implementation Services			
167	5	Migration			
168	6	Documentation			
5.5 Training Requirements					
169	1	Audience			
170	2	Training Concept			
171	3	Objectives			
172	4	Content			
173	5	Delivery			
174	6	Documentation			
5.6 Project Management Requirements					
175	1	Governance			

176	2	Preliminary Project Plan			
177	3	Quality Assurance			
178	4	Track Record			
5.7 Maintenance Support / Service Level Requirements					
179	1	Performance KPIs			
180	2				
181	3	Modifications upgrades and services			
182	4	Knowledge and Expertise			
183	5	Performance Monitoring			

3.2 Technical Capabilities

The Bidder shall provide adequate information to demonstrate clearly that it has the technical capability to meet the requirements for the provision of the Smart Ticketing and Seat Reservation System Products and Services. With this form, the Bidder should summarize important certifications, proprietary methodologies, and/or specialized technologies which the Bidder proposes to utilize in the execution of the Contract or Contracts.

4. Other Bid Forms and Lists

4.1 List of Proposed Subcontractors/Manufactures

	Item	Proposed Subcontractor	Place of Registration & Qualifications

The Bidder shall include in its bid information establishing compliance with the requirements specified by the Employer for these items. Bidders are free to list more than one Sub-Contractor against each item of the IT Products and/or Services.

Should a manufacturer or Sub-Contractor be determined to be unacceptable, the Bid will not be rejected, but the Bidder will be required to substitute an acceptable manufacturer or Sub-Contractor without any change to the bid price. Prior to signing the Contract, the corresponding Appendix to the form of Contract Agreement shall be completed, listing the approved manufacturers or Sub-Contractors for each item concerned.

4.2 Software List

Software Item	A (select one per item)			B (select one per item)	
	System Software	Off the Shelf Software	Application Software	Standard Software	Custom Software

4.3 List of Custom Documentation

Custom Documentation

4.4 Confirmation of Full Responsibility

The Bidder shall include a written confirmation that it accepts responsibility for the successful integration and interoperability of all IT products and or services as required by the bidding documents

4.5 Other Required Information

5. BIDDING FORMS - SECOND STAGE BID

Table 2: Bidder Response Format – Second Stage Bid

Order in Bid	Document Number and Information Required	Check Y/N	Page No.
1.	Bidder's Front Page (Bidder's name. Bid details)		
2.	Bidder's Response Format (as a table of contents/checklist)		
3.	Written confirmation authorizing the signatory of the Bid to commit the Bidder (ITB 38.2)		
	5. Bid Submission Form		
4.	5.1 Letter of Modified Bid – Two Stage Two Envelope Bidding, Second Stage Bid		
	6. Bidder's Amended Eligibility and Qualifications		
5.	6.1 Bidder's Amended Eligibility and Qualifications		
	7. Bidder's Response to the Revised Schedule of Requirements		
6.	7.1 Bidder's Response to the Revised Schedule of Requirements		
7.	7.2 Amended Technical Capabilities		
	8. Guarantees and Declarations		
8.	8.1 Extended Bid Security (If applicable)		
9.	8.2 Bid-Securing Declaration(Not applicable)		
10.	8.3 Manufacturer's Authorization (If applicable)		
	9. Other Bid Forms and Lists		
11.	9.1 Amended List of Proposed Subcontractors		
12.	9.2 Amended Software List		
13.	9.3 Amended List of Custom Materials		
14.	9.4 Other information as required		
	10. Bidder's Price Schedules		
15.	10.1 IT Products and/or Services Provided and Installed Table		
16.	10.2 IT Support Services Table		
17.	10.3 Recurrent Costs Table		
18.	10.4 Grand Summary Costs Table		
19.	10.5 Country of Origin Code Table		
20.	10.6 Price Adjustment Table (if applicable)		

[Employer to prepare list of appropriate forms and modify format for Table 1 to cover the Qualification and Evaluation intended.]

5.1 Letter of Modified Bid – Two Stage Two Envelope Bidding, Second Stage Bid

Date: *[Bidder: date of bid]* IFB: *[Employer: IFB title and number]* Contract: *[Employer: name of Contract]*

To: _____

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Document, including Addenda issued in accordance with Instructions to Bidders (ITB) 11, and your requirements incorporated in the Memorandum “Changes Required Pursuant to Technical Bid Evaluation” issued after the clarification meeting held between us on [. . . *insert date . . .*].
- (b) We offer to design, manufacture, test, deliver, install, pre-commission, and commission in conformity with the Bidding Document the following Railway Ticketing and Seat Reservation Products and/or Services: [. . . *insert narrative . . .*]
- (c) We have enclosed the requested Revised Technical Proposal and Supplementary Price Proposal representing the required amendments and changes as agreed during the bid clarification meetings.
- (d) The total Supplementary Price, excluding any discounts offered in item (e) below is

[amount of foreign currency in words], [amount in figures], and [amount of local currency in words], [amount in figures]

The total supplementary price from the Grand Summary (Schedule No. 5) should be entered by the Bidder inside.

The above total Supplementary Price represents only changes to the original Price Proposal resulting from the revisions to the original Technical Proposal.

- (e) Due to revisions to the original Technical Proposal, discounts offered in the original Price Proposal and the methodology for their application need to be amended as follows: [. . . *insert discounts and methodology for their application if any . . .*]

- (f) We offer our bid to be valid for a period of [. . . insert bid validity period as specified in ITB 23.1 of the BDS . . .] days from the date fixed for the submission deadline for the Second-Stage bids as stipulated in the Letter of Invitation to submit a Second-Stage Bid, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

- (g) If our bid is accepted, we commit to obtain a performance security in accordance with the Bidding Document.

- (h) Due to the revisions to the original Technical Proposal, we have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract:¹

Name of Recipient	Address	Reason	Amount
.....
.....

- (i) We agree to permit ADB or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by ADB.

Name of Recipient	Address	Reason	Amount
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(If none has been paid or is to be paid, indicate “none.”)

Name In the capacity of _

Signed _____

¹ If none has been paid or is to be paid, indicate “None.”

Duly authorized to sign the bid for and on behalf of _____

Dated on day of, _____

6. Bidder’s Amended Eligibility and Qualifications

6.1 Bidder’s Amended Eligibility and Qualifications

The Bidder must provide documentary evidence:

1. regarding any changes that may have occurred between the time of submitting the First Stage and Second Stage Bids that have any material effect on the Bidder’s eligibility and qualifications to perform the Contract; and
2. establishing in accordance with ITB 17 that any additional or revised IT Products and/or Services offered by the Bidder, and not included in the Technical Bid, are eligible.

7. Bidder’s Response to the Revised Schedule of Requirements

7.1 Bidder’s Response to the Revised Schedule of Requirements

The Bidder must provide an updated First Stage Bid, comprising any modifications required to the First Stage Bid as recorded in the Memorandum entitled “Changes Required Pursuant to First Stage Evaluation”.

The Bidder must provide documentary evidence establishing that any additional or varied facilities to be supplied and installed by the Bidder, in accordance with the requirements of the Memorandum entitled “Changes Required Pursuant to First Stage Evaluation”, are technically acceptable. The documentary evidence of the conformity of the Railway Ticketing and Seat Reservation Products and/or Services to the requirements of the Memorandum entitled “Changes Required Pursuant to First Stage Evaluation” may be in the form of literature, drawings and data.

7.2 Amended Technical Capabilities

The Bidder shall provide adequate information to demonstrate clearly that it has the technical capability to meet the revised requirements for the provision of these Products and/or Services. With this form, the Bidder should summarize important certifications, proprietary methodologies, and/or specialized technologies which the Bidder proposes to utilize in the execution of the Contract or Contracts.

8. Guarantees and Declarations

8.1 Extended Bid Security (If applicable)

_____ [Bank's Name, and Address of Issuing Branch or Office]

Beneficiary: _____ [Name and Address of Employer]

Date: _____

BID GUARANTEE No.: _____

We have been informed that _____ [name of the Bidder] (hereinafter called "the Bidder") has submitted to you its bid dated _____ (hereinafter called "the Bid") for the execution of _____ [name of contract] under Invitation for Bids No. _____ ("the IFB").

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee.

At the request of the Bidder, we _____ [name of Bank] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of _____ [amount in figures] (_____) [amount in words] upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- (a) has withdrawn its Bid during the period of bid validity specified by the Bidder in the Form of Bid; or
- (b) having been notified of the acceptance of its Bid by the *Employer* during the period of bid validity, (i) fails or refuses to execute the Contract Form, if required, or (ii) fails or refuses to furnish the performance security, in accordance with the ITB.

This guarantee will expire: (a) if the Bidder is the successful Bidder, upon our receipt of copies of the contract signed by the Bidder and the performance security issued to you upon the instruction of the Bidder; and (b) if the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy your notification to the Bidder of the name of the successful Bidder; or (ii) twenty-eight days after the expiration of the Bidder's bid.

Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

[signatures]

Note: *All italicized text is for use in preparing this form and shall be deleted from the final product.*

8.2 Manufacturer’s Authorization (If applicable)

Invitation for Bids Title and No.:

[If applicable:] Lot, Slice, Product and /or Service No(s):

To: _____

WHEREAS _____ who are official producers of _____ and having production facilities at _____ do hereby authorize _____ located at _____ (hereinafter, the “Bidder”) to submit a bid and subsequently negotiate and sign a Contract with you for resale of the following Products and/or Services produced by us:

We hereby confirm that, in case the bidding results in a Contract between you and the Bidder, the above-listed products will come with our full standard warranty/license.

Name _____ In the capacity of _____

Signed _____

Duly authorized to sign the authorization for and on behalf of : _____

Dated on _____ day of _____, _____.

Note: This authorization should be written on the letterhead of the Manufacturer and be signed by a person with the proper authority to sign documents that are binding on the Manufacturer.

Manufacturer's Authorizations for Information Technologies – except for those technologies which the Bidder itself manufactures – are required for the following types/categories: *[specify, for example: "none" / "all" / "all active (i.e. powered) equipment and all software"]*.

9. Other Bid Forms and Lists

9.1 Amended List of Proposed Subcontractors

	Item	Proposed Subcontractor	Place of Registration & Qualifications

If the Bidder proposes to engage any Sub-Contractors additional to or different from those named in its Technical Bid for major items of supply or services as listed by the Employer in Section III (Evaluation and Qualification Criteria), which the Bidder intends to purchase or subcontract, the Bidder shall give details of the proposed Sub-Contractors, including manufacturers, for each of those items.

In addition, the Bidder shall include in its bid information establishing compliance with the requirements specified by the Employer for these items. Bidders are free to list more than one Sub-Contractor against each item of the IT Products and/or Services.

Should a manufacturer or Sub-Contractor be determined to be unacceptable, the Bid will not be rejected, but the Bidder will be required to substitute an acceptable manufacturer or Sub-Contractor without any change to the bid price. Prior to signing the Contract, the corresponding Appendix to the form of Contract Agreement shall be completed, listing the approved manufacturers or Sub-Contractors for each item concerned.

9.2 Amended Software List

Software Item	A (select one per item)			B (select one per item)	
	System Software	Off the Shelf Software	Application Software	Standard Software	Custom Software

9.3 Amended List of Custom Documentation

Custom Documentation

9.4 Other Required Information

10. Bidder's Modified/Supplemental Price Schedule

10.1 Railway Ticketing and Seat Reservation Products and/or Services Included Table-Modified Bid

Lot number: *[if a multi-lot procurement][Modify as necessary for supply, installation, and achieving Operational Acceptance of the specific items in the Table below, modifying, deleting, or expanding the line items. To assist Bidders to provide uniform costing and presentation Employers may number and describe items and sub items to be provided as required]*

Costs MUST reflect prices and rates quoted in accordance with ITB Clauses 19 and 20. Bidders shall enter a code representing the country of origin of all imported plant and equipment.

Item	Product and /or Service Item Description	Country of Origin Code	Qty.	Unit Prices / Rates			Total Price			
				Supplied Locally	Supplied from outside the Employer's Country		Supplied Locally	Supplied from outside the Employer's Country		
				<i>[local currency]</i>	<i>[local currency]</i>	<i>[foreign currency]</i>	<i>[local currency]</i>	<i>[local currency]</i>	<i>[foreign currency]</i>	
1	SLR STO equipment		660							
2	3rd Party Retailers Equipment		500							
3	Ticket Vending Machines (TVM)		52							
4	Hand Held Bar Code Reader		900							
5	On-Board Distribution Equipment		100							
6	Ticket Selling Website		1							
7	Customer Mobile App		1							
8	Gates		50							
9	Platform Validators		771							
10	Parcel and Luggage Tracking Station Equipment		150							
11	Ticketing system Back Office		1							
12	Luggage and Parcel Tracking back office		1							
13	Installation & commissioning									
14	Training, Training Equipment and Documents (Sec VI-5.6)									
Total Prices: Products and /or Services (for entry in Grand Summary Cost Table)										

10.2 System Support Services Table-Modified Bid

Lot number: *[if a multi-lot procurement] Modify as necessary for to identify all the support services for IT hardware and /or software in the Table below, by deleting, or expanding the line items. To assist Bidders in making uniform costing and presentation Employers may number and describe items and sub items to be provided as required]*

Costs MUST reflect prices and rates quoted in accordance with ITB Clauses 19 and 20

Item	IT Support Service Item/Sub-item Description	Qty.	Unit Prices / Rates			Total Price		
			Supplied Locally	Supplied from outside the Employer's Country		Supplied Locally	Supplied from outside the Employer's Country	
			<i>[local currency]</i>	<i>[local currency]</i>	<i>[foreign currency]</i>	<i>[local currency]</i>	<i>[local currency]</i>	<i>[foreign currency]</i>
Total Prices: IT Support Services (for entry in Grand Summary Cost Table)								

Name of Bidder	Authorized Signature of Bidder:
	:

10.3 Recurrent Costs Table - Modified Bid

Lot number: *[if a multi-lot procurement]*

Costs MUST reflect prices and rates quoted in accordance with ITB Clauses 19 and 20. Unit prices for the same item appearing several times in the table must be identical in amount and currency.

Item	Recurrent Item	Maximum all-inclusive Costs							Prices	
		Warranty Period			Post-Warranty Service Period				Local Currency	Foreign Currency
		Y1	Y2	Y3	Y4	...	Yn			
	Annual Subtotals:									
Total Prices: Cumulative Recurrent (for entry in Grand Summary Cost Table)										

Name of Bidder	Authorized Signature of Bidder:

10.4 Grand Summary Costs Table - Modified Bid

Table	Price Component	Total ¹	
		[Local Currency] Price	[Foreign Currency] Price
10.1	Products and/or Services Provided and Installed		
10.2	IT Support Services		
10.3	Recurrent		
	Other		
GRAND TOTALS to be carried forward to Letter of Bid – Two Stage Bidding, Second Stage Bid			

Name of Bidder _____

Signature of Bidder _____

¹ Specify currency in accordance with Bid Data Sheet 19.1. Create and use as many columns for Foreign Currency requirement as there are foreign currencies

10.5 Country of Origin Code Table - Modified Bid

Country of Origin	Country Code		Country of Origin	Country Code		Country of Origin	Country Code

Name of Bidder	Authorized Signature of Bidder:
:	

10.6 Price Adjustment Table (if applicable)

Pursuant to ITB 20.10 the Employer requires the Bidder to price the specified items identified in the Table below based on a fixed relationship with the Manufacturer’s Recommended Retail Price (MRRP). For example, a Bidders Price may be MRRP + 25%.

The Employer has provided its requirements in the Table. This price relationship shall form the basis of the Contract Price per item and shall be consistently applied over the life of the Contract, unless otherwise agreed in writing by the Employer. The Contractor subsequently appointed shall submit an updated list of the specified items showing the Manufacturer’s Recommended Retail Price and the percentage of positive or negative movement in that price at that date. The Employer will provide the dates to be used.

Date	Items Subject to Adjustable Pricing	Manufacturer’s Recommended Retail Price for a unit of that Item at the Specified Date [currency]	Manufacturer’s Recommended Retail Price Identifier	Percentage Bidders Margin on Manufacturer’s Recommended Retail Price
<i>[Base Date]</i>	Item 1		Base Price	%
<i>[Date 2]</i>			Price Date 2	
<i>[Date 3]</i>			Price Date 3	
<i>etc</i>			<i>etc</i>	
<i>[Base Date]</i>	Item 2		Base Price	%
<i>[Date 2]</i>			Price Date 2	
<i>[Date 3]</i>			Price Date 3	
<i>etc</i>			<i>etc</i>	

Price Adjustment Formula

Price per Unit to be paid by Employer = (Base Price x Price Date Used /Base Price) + Bidders Margin on Price Date Used

Name of Bidder	Authorized Signature of Bidder:
:	

Section 5 - Eligible Countries

This section contains the list of eligible countries.

Regional Members

Afghanistan
Armenia
Australia
Azerbaijan
Bangladesh
Bhutan
Brunei Darussalam
Cambodia
China, People's Republic of
Cook Islands
Fiji
Georgia
Hong Kong, China
India
Indonesia
Japan
Kazakhstan
Kiribati
Korea, Republic of
Kyrgyz Republic
Lao People's Democratic Republic
Malaysia
Maldives
Marshall Islands
Micronesia, Federated States of
Mongolia
Myanmar
Nauru
Nepal
New Zealand
Pakistan
Palau
Papua New Guinea
Philippines
Samoa
Singapore
Solomon Islands
Sri Lanka
Taipei, China
Tajikistan
Thailand
Timor-Leste
Tonga
Turkmenistan
Tuvalu
Uzbekistan
Vanuatu
Viet Nam

Nonregional members

Austria
Belgium
Canada
Denmark
Finland
France
Germany
Ireland
Italy
Luxembourg
The Netherlands
Norway
Portugal
Spain
Sweden
Switzerland
Turkey
United Kingdom
United States

SECTION VI: SCHEDULE OF REQUIREMENTS

DO NOT COPY

Table of Contents

Overview	_____	3
1.1	Background	3
1.2	Structure of the SOR	3
1.3	Project Objectives	3
1.4	Scope of Work	3
2	Current Environment _____	7
2.1	Ticket Sales	7
2.2	Ticket Reservation System	8
2.3	Ticket Printing	9
2.4	Logistics and Storing of Tickets	9
2.5	Disadvantages of the Existing Ticketing and Reservation System.....	9
2.6	Freight Services	9
2.7	Areas for Improvement	10
3	Desired Future State _____	11
3.1	Business Requirements of the System	11
3.2	Functional Performance Requirements of the RTRS System	11
3.3	Assumptions	13
3.4	Expected Implementation Timetable	14
4	Guiding Principles _____	14
4.1	Standards.....	15
4.2	Card Physical Characteristics	15
4.3	Card Architecture and Commands	15
4.4	Card Security	15
4.5	Card / Device Testing and Certification.....	16
4.6	RF (Proximity) Interface	16
4.7	UICC / NFC Interface.....	16
4.8	Transport Use Cases	17
4.9	Transport Data	17
4.10	User Interface	17
4.11	General Requirements.....	17
5	Specific Requirements _____	20
5.1	Business Requirements	20
5.2	Functional/Technical Requirements	20
5.3	Operational Requirements	48
5.4	Implementation Requirements	49
5.5	Training Requirements	52
5.6	Project Management Requirements	52
5.7	Maintenance Support / Service Level Requirements	53
6	Attachments _____	56
6.1	Draft Software Licence Agreement Requirements	56

Overview

1.1 Background

1.2 Structure of the SOR

The document provides the context for which this bidding document for the railways operational features, user equipment and services provided by a Railway Ticketing and Reservation System (RTRS) system was issued and the detailed requirements according to the following categories:

- Business
- Functional/Technical
- Operational
- Implementation
- Training
- Project Management
- Support

The intended audience of this document are the respondents to these Bidding Documents.

1.3 Project Objectives

The main objective is to provide a new fare collection system for Sri Lanka Railways. It is necessary to update the ticketing system to meet the requirements of a modern railway and make use of technological innovations.

The new system will:

- Be simple, quick and easy for passengers to use
- Provide multiple sales channels and ticket media including paper, mobile and smart card to reduce queuing
- Provide automated ticket sales to speed up data collection and analysis
- Offer multiple payment methods to reduce cash
- Integrate with other transport modes to provide one ticket for multi-modal travel
- Provide better operational information in a shorter timeframe

This document describes the requirement for design, build, and maintenance of smart ticketing and seat reservation system for Sri Lanka Railways. It also includes requirements for parcel and goods tracking. SLR will operate the new system.

1.4 Scope of Work

The Scope of Work will be divided into two Phases and includes:

- 1) The Initial Phase including the Supply and Installation and commissioning of the requested Back Office, Sales Channels, Validation Devices and testing for the Back Office, Sales Channels and Validation Devices requested.
- 2) The Operational Phase including the Maintenance Contract and Service Level Agreement (SLA), SLR personnel training.

1.4.1 The Initial Phase

a Overview of the System

The ticketing system proposed will rely upon six distribution channels to provide various ticketing services to SLR's passengers.

Firstly, SRL Station Ticket Offices (STO) will offer the full range of tickets for both commuter and long-distance travel and will become the unique distribution channel to issue Pay-As-You-Go (PAYG) and Staff Warrant smart cards.

Secondly, customers will be able to purchase tickets for local and long-distance journeys through a network of Ticket Vending Machines (TVM) which can be in office blocks, shopping centres as well as

major railway stations.

In some instances where a station has no ticket selling capabilities it will still be possible to purchase tickets on-board the train from the conductor. This will be done using a light version of the equipment to be used in the STO and based on handheld terminals.

Through the online ticket selling web site, customers will be able to purchase long distance tickets. These e-tickets will be either printed by the customer (known as “home-printed ticket”) or kept in an email (known as “email ticket”) ready to be shown to the ticket-inspection staff.

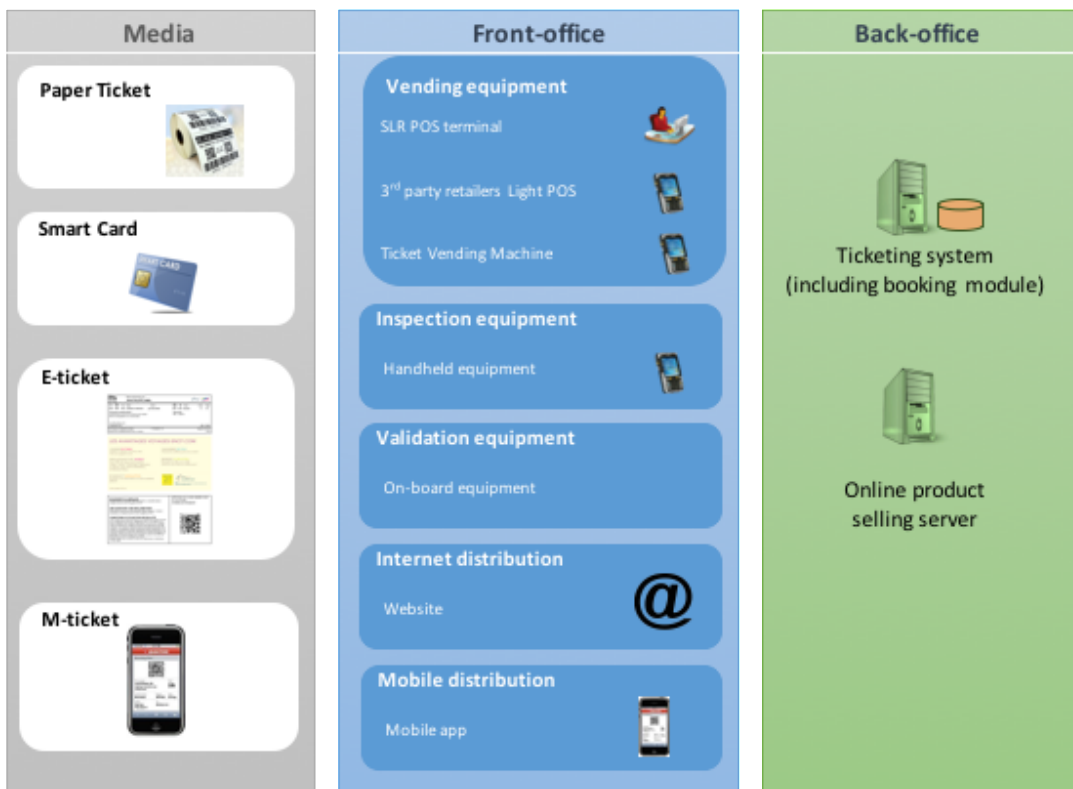
The mobile application will provide an optimized interface to the online product selling server. Passengers will be able to purchase tickets from their smartphones. The ticket will then be downloaded to the mobile phone and visible as a 2-D barcode.



A network of third party agents and kiosks, as shown in the picture, will be implemented such that passengers can top-up their season tickets and /or PAYG stored value tickets.

The passengers will have access to traditional media such as paper ticket and to more modern media such as m- ticket (mobile ticket) and electronic ticket (e-ticket).

The diagram below describes the ticketing system.



Overview of RTRS system components

The first layer of this architecture shows all the media that will be available to SLR passengers. These are the paper ticket (either on secured paper such as RTCT2 or printed on thermal paper), smart cards, e-ticket (either in the form of home-printed ticket or kept in an email) and m-ticket (i.e. ticket hosted by a mobile phone application).

The second layer covers the different vending and inspection equipment.

The requirements for the last layer, the back-office system is described in the present specification.

The back-office, is composed of two main systems, namely:

- The back-office ticketing system manages the train inventory, the fare policies, the reservation and customer details. Additionally, it also generates reports, collects information from the front-office equipment, supervises the front-office equipment, connects to external ticketing systems and administers the whole ticketing system.
- The online product selling server allows sales of e-tickets and m-tickets from the SLR web site.

b Interoperability with other Modes of Transport

Sri Lanka is undergoing a period of major infrastructure investment in transport sector. Significant resources are being focused on developing transport links across the country with the construction of new expressways, LRT and rail projects prominent.

Any smart ticketing scheme that is introduced by SLR will ultimately need to be interoperable with other public transport ticketing systems, such as LRT, and Bus as they are implemented.

c Data

Recently, many cities and regions introduced a smart card system for their public transport systems. In addition to ticket handling, being an alternative for individual regional or urban tickets, these systems also provide valuable data. Without these systems, information of origins and destinations, number of passengers, trip lengths, etc. can only be made available by time and budget consuming surveys. These surveys often only provide limited data due to time and budget restrictions. Smart card systems have the potential of providing more and better insights of revealed passenger behaviour. These insights are helpful when dealing with the main current challenges in the public transport industry.

Data provides

- Waiting times
- O-D data
- Ticket type usage
- Connected journeys & interchanges
- Peak travel periods
- Passenger numbers
- Route planning
- Scheduling info

This data, when analysed, will give SLR significant insight into the operational performance of the rail network. This will enable better use of resources and provide passengers with a more reliable service.

d Freight Services Overview

This section will describe the requirements for the new parcel and luggage tracking service.

1.4.1.a.1 Parcel tracking

When a parcel is handed over to the SLR staff the following information will be recorded electronically:

- The weight and size of the parcel
- The destination SLR station
- The address of the recipient
- Name and address of the sender
- The value of the contents, for insurance purposes
- The required delivery time
- payment

With this information, the cost of sending the parcel can be calculated and the payment made using either cash or credit / debit card.

A unique identifier will be allocated to the parcel so that the sender can follow its progress through the parcel tracking website.

1.4.1.a.2 Luggage fees

For large items of luggage, it is necessary to pay a fee for them to be carried on the SLR. The cost of this is dependent upon the weight and destination of the luggage.

An electronic system will be provided that records the relevant information about the luggage needed to calculate the appropriate charge.

All the data gathered from the above processes will be stored in the back-office system and this will be used to track the progress of the parcel delivery and confirm that a parcel was sent and received by the correct recipient on the date requested.

Operational Phase

Training, Operation and Maintenance.

The Training of SLR personnel shall happen before the system tests. Once implementation of the system has been completed, the system enters a 'steady state' situation, in which the system will be operated and maintained. This phase will typically involve the following activities:

- Operation and Maintenance of the system
- Technical Support
- Reports and frequent Meetings
- Software Maintenance Support
- Introduction and Supply of minor changes to the system
- Introduction and Supply of major changes to the system and intermediate upgrades to allow the system to meet changing demands
- Performance Management Support
- Performance Management – Quality of Services
- Analysis – Alarms, RAMS and MTBF

2 Current Environment

The following elements are important in understanding the environment into which the purchased User Equipment and Services will become operational.

2.1 Ticket Sales

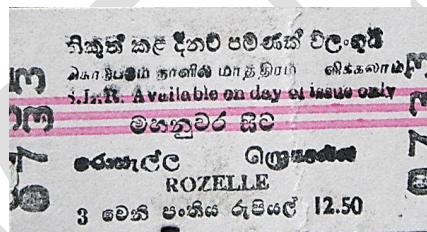
Sri Lankan Railway (SLR) has 175 stations and 164 sub stations. In the current ticketing system, separate tickets are issued between each origin and destination resulting in hundreds of thousands of possible combinations of tickets for 1st, 2nd, and 3rd classes.

In practice, stations have tickets for nearby and for popular destinations. For other destinations, book tickets (hand written tickets in standard format) are issued.

This system requires that 50,000 - 60,000 combinations of tickets are printed.

Ordinary tickets are pre-printed at Railway Headquarters. The size of the existing ticket is about 2"x 1" and consists of following information printed on it.

- Serial Number
- Station of origin and destination in all three languages.
- The price
- The class
- The issue date which will be impressed on the hardboard ticket



When ordinary tickets are issued, they are impressed with the date. They are perforated when checked at the entrance station and are finally collected at the destination station to prevent re-use. The tickets that are collected are sorted serially by staff of origin station and recorded in a "collected ticket register". The purpose is to identify out of sequence tickets which might indicate cheating at the origin station.

At present, SLR issues several different ticket types which include:

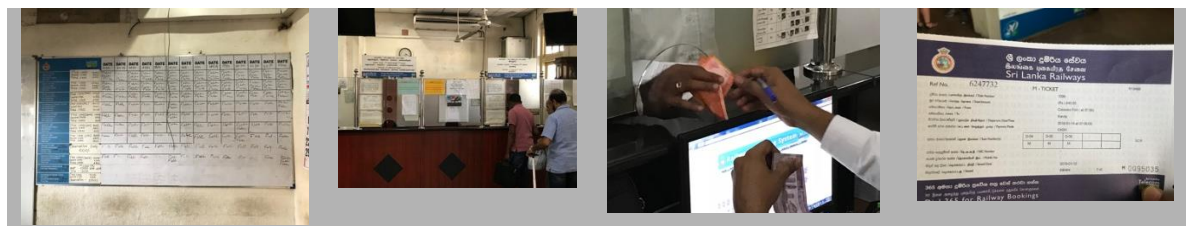
- Ordinary Single Class Tickets,
- Workmen Single Class (Third Class),
- Intercity Express Tickets,
- Special Third Class return tickets,
- Rail Car and unattended halt tickets,
- Reservation Ticket Double fair Suburban 3rd Class Return Tickets,
- Zone Tickets (3rd Class),
- Ordinary and Concessionary Season Tickets (2nd & 3rd),
- Platform Tickets
- Book Ticket
- Excess Fair Ticket(EFT)

2.2 Ticket Reservation System

A ticket reservation system is in place that allows passengers to reserve a ticket on long distance journeys. This can be done either by turning up in person at one of 50 major stations. Alternatively, a service is offered by Mobitel that enables passengers to reserve tickets over the phone or online. They then need to go to a station or a Mobitel shop to collect the ticket. This service has an allocation of 30%(common to Mobitel and SLR) of the total number of tickets available. The remaining 70% is available for sale by SLR.

In the Ticket office, such as at Colombo Fort in the pictures below, the passenger provides evidence that they have reserved a ticket and it is then printed out. The information system enables passengers to determine what

seats are available. This information is only available at the station and public do not have access to the availability of the tickets.



Schedule of available seats

Ticket office windows to collect reserved tickets

Cash payment

Reserved ticket

2.3 Ticket Printing

The tickets issued by the Sri Lanka Railway (except the tickets issued through Mobitel Reservation System) are printed in a press run by the Sri Lanka Railways at the headquarters.

The printing machines used to print the tickets are very old. These machines are manually operated and most of the time these machines will breakdown. Since these machines are very old spare parts are not available and the Railway staff is using alternative methods to repair the machines.

2.4 Logistics and Storing of Tickets

Once the ticket is printed they are shipped to relevant railway stations using the trains which includes manual recording, loading and unloading.

The tickets are stored in a special cupboard.

2.5 Disadvantages of the Existing Ticketing and Reservation System

The existing systems have the following disadvantages:

- Frequent shortages of tickets at stations due to delays in importing blank tickets, delays in printing tickets, printing machine breakages. When no tickets are available they need to be written out by hand, which is a very slow process.
- Cost per ticket is high due to imported paper from the Netherlands being used for printing tickets and due to high inventory carrying cost. No local alternative source is available.
- The system is totally manual. This causes delays in issuing tickets at busy stations.
- Loss of revenue due to ticketless travel.
- The date imprinting machines are very old and do not print the date properly
- It is not possible to collect timely information about traffic patterns as all data is collected manually
- The seat reservation system has been partially automated by Mobitel. However, it is still a requirement to go to the station to collect a paper ticket
- Difficulty in tracking fraud
- Lack of flexibility e.g. it is not possible to introduce flexible ticketing fares
- Information on available ticket types and their purposes are not well communicated to the users
- Only two channels are available for passengers to buy tickets

2.6 Freight Services

There are three types operations carried out by the SLR at Colombo Fort Railway Station related to Freight Services.

1. Passenger Luggage Service
2. Locker service (Only available at Colombo Fort)
3. Parcel Service

First two operations are provided via cloak room in the main platform of the station.

2.6.1 Passenger Luggage Service

In this service SLR accepts baggage from passengers and charges for its transportation to the destination. Passengers can carry up to 35 kg free of charge if they hold a first-class ticket and if the baggage is over 35 kg they should pay. Other limits are shown in below.



There is a published list of charges for the service based on the weight of the luggage as shown in the picture. Based on this tariff the passenger has to pay the appropriate fee once the luggage has been weighed. Everything is done manually. A manual machine issues a receipt and all transactions are recorded in a series of logs.

There is no automated system available to track the luggage.

2.6.2 Locker Service

The locker service available for all passengers for a charge of Rs. 50/= + Rs. 8 as tax per day (roughly US\$ 0.5 per day). The availability of lockers is not visible publicly and locker management is done using a manual process.

2.6.3 Parcel Service

The monthly income of the Colombo Fort Railway Station through Goods handling is around Rs. 6.5 million and all-island monthly income is 19 million

According to the officer in-charge all major courier services (DHL, FedEx, etc...) use Sri Lanka Railways to send goods as it is cost effective. Most of the lottery and movie distribution is done using Sri Lanka railway.

There is no automated tracking system. All management and handling are done manually.

All the data needs to be recorded manually so the staff spend a lot of time book keeping.



2.7 Areas for Improvement

Several areas have been identified as needing improvement, these include:

- Computerizing the receipt issuing process – High priority
- Introducing a barcode and tracking system for luggage and parcels
- SMS alert system for customers so they can track their parcels and luggage
- Registered customer portal to handle regular customers
- Parcel delivery to the customer's front door
- Packing facility at major stations
- Security tapes
- Proper storage facilities
- Proper equipment to handle goods
- Dedicated Goods trains, as freight has increased significantly over the last couple of years

3 Desired Future State

3.1 Business Requirements of the System

It is proposed to introduce an automatic fare system that will allow multiple ticketing technologies to co-exist. The system will include bar code tickets that can be provided on paper or a mobile device. There will also be a public transport contactless smart card that will be used to carry stored value and period ticket products.

The Central System will collect all data generated in the system and provide management reports and detailed reports on a regular basis. There will also be smart card management functionality which will include security and hotlist management.

Reports sent to and provided by the central system shall be structured as described later in the document.

There will need to be an accounting module to account for revenues collected and interface with existing financial systems used by SLR.

Currently SLR performs all accounting functions manually.

There will need to be a system for collecting revenues on a weekly basis from third party agents and paying their commissions. This system will also need to interface with the SLR accounting systems.

The Supplier will be required to comply with all relevant legal codes and regulations that govern the business processes and procedures that will be automated by the system.

All equipment shall be designed and installed in a way that allows and facilitates the access and use of public transport services by disabled persons. The Supplier will describe the measures that he plans to put in place to comply with this requirement.

3.2 Functional Performance Requirements of the RTRS System

a RTRS System overview

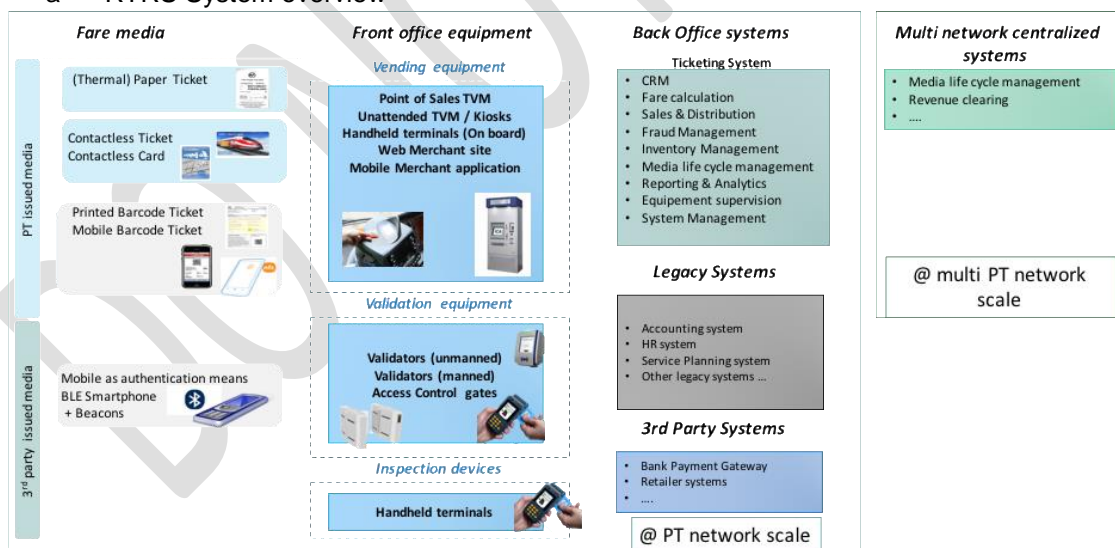


Figure 1 - Overview of RTRS System components

The RTRS System will rely upon six distribution channels to provide various ticketing services to the customers:

- SLR STO's
- POS at third party retailers
- Ticket Vending Machines (TVMs) at a variety of accessible locations
- Website

- Mobile Application
- Call Centre

The table below shows the functionality of the above sales channels.

Channel	Paper Bar Code		Mobile Bar Code		SLR Smart Card			Penalty Notice	
	Validate	Issue	Validate	Issue	Validate	Issue	Top up	Validate	Issue
Platform Gates Validators	✓	✗	✓	✗	✓	✗	✗	✗	✓
3rd Party Retailer	✗	✓	✗	✗	✗	✗	✓	✗	✗
Internet	✗	✓	✗	✗	✗	✗	✓	✗	✗
Mobile	✗	✗	✗	✓	✗	✗	✓	✗	✗
TVM	✗	✓	✗	✗	✗	✗	✓	✗	✗
SLR POS	✗	✓	✗	✗	✗	✓	✓	✗	✗

Figure 2 – Functionalities of the sale channels

Under the above framework, Sri Lankan Railway (SLR) owned POS will manage sales of tickets and will remain the unique sales channel for issuing smart cards.

A network of third party retailers will allow customers to purchase tickets and top-up transport cards. These could include supermarkets and other retailers

A network of TVMs will allow customers to purchase the full range of tickets and top up their smartcards. These will be located at major stations and in local offices to enable passengers to purchase tickets before they arrive at the station.

The mobile application will provide an optimized distribution interface. Customers will be able to purchase tickets from their smartphones.

Customers will be unable to purchase tickets on-board any Purchaser transport mean.

The customers will have access to traditional media such as paper ticket and to more modern media such as m-ticket (mobile ticket), and smartcards.

The back-office, is composed of the ticketing system that manages the fare policies and customer details. Additionally, it also generates reports, collects information from the front-office equipment, supervises the front-office equipment and administers the whole ticketing system. It also allows topping up the Purchaser smart card from the web site.

b Fare policy

The existing fare policy will remain in place until the System is operational. The table below shows which fares will be offered on which media through the distribution channels.

Ticket Type	Station Ticket Office (STO)		Ticket Vending Machine (TVM)		Mobile		Web		Call Centre		3 rd Party Agents/Kiosk	
	C	LD	C	LD	C	LD	C	LD	C	LD	C	LD
Single	✓	✓	✓	✓	✓	✓		✓		✓		
Return	✓	✓	✓	✓	✓	✓		✓		✓		
Season (week, month)	✓	✓	Top up	Top up	Top up	Top up	✓	✓	✓	✓	Top up	Top up
Staff / Warrant	✓	✓					✓	✓				

Pay-As-You-Go	✓	✓	Top up	Top up	Top up	Top up	Top up	Top up			Top up	Top up
Payment Method	Cash Card	Cash Card	Card	Card	Card	Card	Card	Card	Cash Card	Cash Card	Cash Card	Cash Card

Key: C=Commuter; LD=Long Distance; ✓ = issue and renew product

Table 1 – Fares and distribution channels

With the introduction of smartcards and mobile ticketing it will be possible to implement a whole range of new products to meet the future needs of SLR.

Validation rules

Customers will be required to validate their tickets when entering a station. Data will also be collected from the ticket on exit from the station.

b Inspection procedures

Customers will be required to present their ticketing media upon request from the inspectors. The inspectors will read the media using their handheld inspection devices and have their validity confirmed.

In the event of any non-conformity, the inspector will follow the laid down procedures including the potential to issue a penalty notice.

3.3 Assumptions

This Specification has been developed based on the following assumptions:

Infrastructure: There will be a mobile solution implemented first. This will minimize the amount of infrastructure necessary but provide benefits quickly to passengers and SLR

Ticket Validation: Initially bar code tickets will be implemented on paper and mobile media. Tickets will be checked in the same way as now, visually at entry and exit points at the stations. Additionally, staff will be provided with Hand Held Devices to scan the bar code tickets.

3.3.1 Payment Method

There are multiple payment methods that will be allowed by the system. These can be simplified into the two categories of cash and card payments.

Cash based payments will be accepted at all sales channels except, mobile, web and Ticket Vending Machines (TVM).

The cash will be paid directly into the SLR bank account.

Card payments can be one of several forms:

- a) Bank issued credit or debit
- b) E money

E money cards

Sri Lanka has many providers of E money cards that can be used for a range of on-line and off-line payments. These include M Cash and EzCash.

There are also plans at the Central Bank of Ceylon to introduce an e money card that can only be used in public transport, a so called “closed loop” card.

The RTRS system introduced by SLR needs to be aware of these e money schemes and consider their usage as a payment method for on-line and off-line transactions

Their usage shall be considered after a full commercial assessment, but the hardware that is introduced should be capable of being adapted with minimal effort and cost to accept the relevant e money payment method. This means that smart card readers should be easily adaptable to read a range of cards from several sources.

3.4 Expected Implementation Timetable

The Bidder is requested to submit a Project Implementation Plan comprising of the Project Organization Chart and the Project Time Schedule.

The Project Organization Chart shall indicate all roles and responsibilities required for the project implementation in the Initial Phase and in the Operational Phase.

The Bidder shall submit, with his proposal, a project time schedule indicating how he will accomplish the project, reflecting all time periods and critical dates and milestones regarding, but not limited to:

- Starting the Project and set up phase
- Design Phase
- Supply, Installation and Commissioning of the front-end equipment
- Pilot Phase including testing and acceptance
- Site preparations to achieve the 100% coverage,
- Preparation work to achieve 99.98% availability, extension of the system network and redundancy improvements
- Trial Run period of (3) months
- Training program to SLR Management and Users
- Operation and Maintenance activities including the management and engineering meetings, reporting and failure statistics with analysis, etc.

The total time for the implementation must not exceed 18 months after signing the contract.

4 Guiding Principles

The proposed solution should adhere to the following principles.

4.1 Standards

General Standards, Specifications and Norms. The respective ones used shall be the last edition in force in the date of the bid publication.

The provided RTRS system, front office equipment and cards shall be compliant to the following list of standards, except those indicated as optional.

Upon Purchaser demand, the Supplier shall be able to bring evidence of this compliance before the Operational Acceptance tests. This shall be done by showing a Certificate Letter / Letter of Approval issued by a recognized Certification Authority or by sharing test results from a recognized accredited test lab.

4.2 Card Physical Characteristics

ISO/IEC 7810:2003 Amd A2:2012 - Identification cards – Physical characteristics + Amd A2:2012

ISO/IEC 7816-1 Integrated circuit cards with contacts – Card characteristics

ISO/IEC 14443-1:2008 Identification cards — Contactless integrated circuit cards — Proximity cards — Part 1: Physical characteristics

ISO/IEC 14443-1:2008 +Amd A2:2012 Identification cards — Contactless integrated circuit cards — Proximity cards — Part 1: Physical characteristics +Amd A2:2012

4.3 Card Architecture and Commands

ISO/IEC 646:1991 Information technology – ISO 7-bit coded character set for information interchange

ISO/IEC 7812-1: 2006 Identification cards – Identification of issuers – Part 1: Numbering system

ISO/IEC 7816 Integrated circuit cards with contacts – Card Operating System

ISO/IEC 7816-3 Information technology – Identification cards – Integrated circuit(s) cards with contacts –Part 3: Electronic signals and transmission protocols

ISO/IEC 7816-4:2005 Identification cards — Integrated circuit cards — Part 4: Organization, security and commands for interchange

ISO/IEC 7816-4:2013 Identification cards — Integrated circuit cards — Part 4: Organization, security and commands for interchange

ISO/IEC 7816-5 Identification cards – Integrated circuit(s) card with contacts – Part 5: Numbering system and registration procedure for application identifiers

ISO/IEC 7816-13 Identification cards – Integrated circuit cards – commands for application management in a multi-application environment

ISO/IEC 8825-1:2008 Information technology-ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER)

ISO/IEC 13239:2002 Information technology – Telecommunications and information exchange between systems — High-level data link control (HDLC) procedures

ISO/IEC 14443-3 Identification cards — Contactless integrated circuit cards — Proximity cards — Part 3: Initialization and anticollision

ISO/IEC 14443-3:2011 Identification cards — Proximity cards — Part 3: Initialization and anticollision

ISO/IEC 14443-3:2011 / Amd.1:2011 Identification cards — Proximity cards — Part 3: Initialization and anticollision – AMENDMENT 1: Electromagnetic disturbance handling and single-size unique identifier

ISO 14813-6: 2009 Intelligent transport systems — Reference model architecture(s) for the ITS sector — Part 6: Data presentation in ANS.1

GlobalPlatform Card Specification 2.2.1 Card Specification 2.2.1

GlobalPlatform Card Specifications 2.2 – Amendment A Confidential Card Content Management v1.0 – October 2007 JCP – Java Card Platform Specification 2.1

GlobalPlatform Card Specifications 2.2 – Amendment C Card Specifications 2.2 – Amendment C: Contactless Services v1.0.1 – October 2007

JCP Java Card Platform Specification 2.1 Java Card Platform Specification 2.1

4.4 Card Security

ISO/IEC 7816-9 Identification cards – Integrated circuit(s) cards with contacts – Part 9: Additional interindustry commands and security attributes

ISO/IEC 7816-15:2004 +Amd A2:2008 Identification cards — Integrated circuit cards —Part 15: Cryptographic information application

ISO/IEC 9798-2: 2008 Information technology – Security techniques – Entity authentication – Part 2: Mechanisms using symmetric encipherment algorithms

ISO/IEC 9798-2:2008/Cor 3:2013 Information technology — Security techniques — Entity authentication — Part 2: Mechanisms using symmetric encipherment algorithms

ISO 15408: 2008 Information technology — Security techniques — Evaluation criteria for IT security (Common Criteria)

4.5 Card / Device Testing and Certification

ISO/IEC 10373-6:2011 Identification cards — Test methods — Part 6: Proximity cards

ISO/IEC 10373-6:2011/ Amd.1:2011 Identification cards — Test methods— Part 6: Proximity cards — AMENDMENT 1: Additional PICC classes

ISO/IEC 10373-6:2011/ Amd.2:2012 Identification cards — Test methods — Part 6: Proximity cards — AMENDMENT 2: Test methods for electromagnetic disturbance

ISO/IEC 10373-6:2011/ Amd.3:2012 Identification cards — Test methods — Part 6: Proximity cards — AMENDMENT 3: Exchange of additional parameters, block numbering, unmatched AFI and TR2

NFC Forum NFC Forum Authorized Test Lab Audit Manual v0.14

4.6 RF (Proximity) Interface

ISO/IEC 14443-1:2008 Identification cards — Proximity cards — Part 1: Physical characteristics

ISO/IEC 14443-1:2008/ Amd.1:2012 Identification cards — Proximity cards — Part 1: Physical characteristics AMENDMENT 1: Additional PICC classes

ISO/IEC 14443-2:2010 Identification cards — Contactless integrated circuit cards — Proximity cards — Part 2: Radio frequency power and signal interface

ISO/IEC 14443-2:2010 /Amd.1:2011 Identification cards — Proximity cards — Part 2: Radio frequency power and signal interface – AMENDMENT 1: Limits of electromagnetic disturbance levels parasitically generated by the PICC

ISO/IEC 14443-2:2010 / Amd.2:2012 Identification cards — Proximity cards — Part 2: Radio frequency power and signal interface – AMENDMENT 2: Additional PICC classes

ISO/IEC 14443-2:2010 / Amd.3:2012 Identification cards — Proximity cards — Part 2: Radio frequency power and signal interface – AMENDMENT 3: Bits rates of $fc/8$, $fc/4$ and $fc/2$

ISO/IEC 14443-4:2008 Identification cards — Contactless integrated circuit cards — Proximity cards — Part 4: Transmission protocol

ISO/IEC 14443-4:2008 /Amd.1:2012 Identification cards — Proximity cards — Part 4: Transmission protocol AMENDMENT 1: Exchange of additional parameters

ISO 14812: 1999 Transport Information and Control Systems (Glossary standard terminology for the transport information and control sector)

CEN TC278 [not yet published] Public transport — Interoperable fare management system — ISO/IEC 14443 Implementation specifications for IFM Systems

ISO TR 24014-3:2013 [Working draft] – Public Transport – Interoperable Fare Management System – Part 3: Complementary concepts to Part 1 for multi-application media

EMV Contactless Communication Protocol Specification for Payment Systems — Book D — EMV Contactless Communication Protocol Specification — Version 2.2 June 2012

4.7 UICC / NFC Interface

ETSI TS 102 225 Smart Cards; Secured packet structure for UICC based applications (Release 7) (2006-04)

ETSI TS 102 226 Smart Cards; Remote APDU structure for UICC based applications (Release 7) (2007-07)

ETSI TS 102 613 UICC CLF interface – Part 1 Physical and data link layer characteristics (Release 7 2007-11)

ETSI TS 102 622 Smart Cards; UICC – Contactless Front-end (CLF) interface; Host Controller Interface (HCI) (Release 7 2008-02)

ISO/IEC 18092 Near Field Communication – Interface and protocol

GlobalPlatform UICC Configuration 1.0 – October 2008 UICC Configuration 1.0 – October 2008

GlobalPlatform Messaging Specification 1.0 – October 2003

GSMA, MNO-SP Interface: Business Process Implementation Guidelines using GP Protocols

GSMA, NFC Service Provider Applet Development Guidelines

GSMA, NFC UICC Requirement Specification, Version 3.01, (Oct12)

GSMA, NFC Handset APIs & Requirements v3.01 (Oct12)

GSMA, NFC Core Wallet Requirements and Core Package File Technical Proposal V1.0 (Oct12)

GSMA, Multi Protocols for Interoperability (Nov12)

NFC Forum, NFC Logical Link Control Protocol (LLCP) Technical Specification v1.1
NFC Forum, NFC Activity Technical Specification v1
NFC Forum, NFC Simple NDEF Exchange Protocol specification v1
NFC Forum, NFC Analog Technical Specification v1
NFC Forum, NFC Controller Interface (NCI) Technical Specification v1
NFC Forum, NFC Data Exchange Format (NDEF) Technical Specification v1
NFC Forum, NFC Forum Connection Handover v1.2
IETF, Internationalized Resource Identifiers (IRIs) RFC3987 <http://www.ietf.org/rfc/rfc3987>
WC3, Widget Packaging and XML Configuration, <http://www.w3.org/TR/widgets/>
RFC1032, Domain Administrators Guide, IETF RFC1032 <http://www.ietf.org/rfc/rfc1032>

4.8 Transport Use Cases

ISO 24014-1:2007 Public transport – Interoperable fare management system – Part 1: Architecture (IFMS)
ISO 24014-2 [Working draft] – Public Transport – Interoperable Fare Management System – Part 2: Recommended Business Practice for Set of Rules
ISO TR 24014-3:2013 [Working draft] – Public Transport – Interoperable Fare Management System – Part 3: Complementary concepts to Part 1 for multi-application media

4.9 Transport Data

EN1545-1:2005 Identification Card Systems – Surface Transport Applications – Part 1: Elementary Data Types, General Codelists and General Data Elements
EN1545-2:2005 Identification Card Systems – Surface Transport Applications – Part 2: Transport and Travel Payment Related Data Elements and Codelists
ISO 14813-6: 2009 Intelligent transport systems — Reference model architecture(s) for the ITS sector — Part 6: Data presentation in ANS.1
ISO 14817:2002 Transport information and control systems — Requirements for an ITS/TICS central Data Registry and ITS/TICS Data Dictionaries
ISO TS 14904:2002 Road transport and traffic telematics – Electronic fee collection (EFC) – Interface specification for clearing between operators
EN-15320 Identification card systems – Surface transport applications – Interoperable Public Transport Applications – Framework
EN 28701:2012 Identification of fixed PT Objectives

4.10 User Interface

EN 1332-1 Identification Card Systems – Man-Machine Interface – Part 1: General design principles for the user interface
EN 1332-3 Identification Card Systems – Man-Machine Interface – Part 3: Key pads
EN 1332-4 Identification Card Systems – Man-Machine Interface – Part 4: Coding of user requirements for people with special needs

4.11 General Requirements

Language Support: All systems must provide support for *Sinhalese, Tamil and English languages*.

Dates: All information technologies MUST properly display, calculate, and transmit date data, including, but not restricted to 21st-Century date data.

Electrical Power: All equipment must operate on voltage and frequency of 230V +/- 6%, 50Hz and include power plugs standard in Sri Lanka.

Environmental: Equipment must be capable of operation in the types of environment typically encountered in railway stations in Sri Lanka.

Safety: All equipment must be intrinsically safe. All electronic equipment that emits electromagnetic energy must be certified as meeting *EN 55022*, or equivalent, emission standards.

Design Requirements: All equipment shall be ergonomically designed and constructed in a manner that is easy to use, functional and safe. Additionally, the design of all equipment and components shall be of tamperproof

design and shall facilitate easy access by authorised service and maintenance personnel yet prevent any unauthorised access to equipment components. Equipment intended for use by or for Customers shall be aesthetically pleasing and easy to understand. All equipment shall be robustly designed for non-stop continuous operation for its intended purpose in a public transportation environment.

System Security: The solution will be required to follow the ISO/IEC 27001 norm in terms of IT security.

The System shall provide a complete, high-security method for collection and control of revenues. In the event security is compromised at any time during the design, development, installation, and testing stages of the system, the Contractor shall immediately inform Purchaser as soon as the condition is detected. The Contractor shall ensure that all system passwords shall be safeguarded and resettable under Purchaser control, and that no "back doors" or means of unauthorized entry are designed into the system.

The ability to remove or add users authorized to access the system shall be restricted to designated users with the highest level of security clearance. Additional password authorization shall be required to perform this function. At no time shall any password be displayed on any screen in the revenue system.

A system security plan shall be developed and presented to Purchaser for review and approval. Within 90 days of project commencement.

This system security plan shall include password systems and administration, communications security measures, operating systems and program security, and data encryption methods, and shall be submitted in conjunction with the system architecture submission.

Physical Security: There shall be adequate physical security in place to ensure that there is no possibility of unauthorized entry to the Central Back Office equipment or any of the equipment installed at stations. Modules holding system security keys shall be designed with anti-tamper mechanisms which will be activated should they be removed by unauthorized personnel.

Product Supply and Availability: The System, its equipment, and all associated components and software shall, unless more stringently specified, conform to industry standards as specified within the Sections of these Technical Specifications. Components supplied shall be based on standard products by established fare collection and financial payment industry suppliers with documented experience producing and supplying such components.

If a component becomes obsolete or discontinued prior to completion of initial System Implementation, the supplier shall provide the latest generation of that component.

Non-standard, prototype, obsolete or discontinued products, or components shall not be utilised. For each deployment phase, components shall be of current manufacture.

Fault Tolerance and Recovery: The System is the central point of fare payment interaction between SLR and its Customers, and system failure shall have an immediate and adverse impact on SLR's operations and revenues. The Contractor shall design the system and equipment to quickly recover from power, communications and/or software failures, automatically returning to the operating state it was in prior to the experienced fault without loss of data.

Modular Design: Each of the basic functions within the field equipment shall be performed by modular components, which shall permit easy field replacement of inoperative modules to quickly return the equipment to service. Repair and adjustment of modules shall be performed in workshop facilities.

The equipment design shall support a modular design This approach shall provide individual modules that are fixed in unitised frames, rails, or slides with fast latching devices, captive fasteners, or other means that do not require the use of tools to remove and replace modules. Where specified, modules shall also be secured by keys or electronic locks to prevent unauthorised removal. This means that replacement of modules can be undertaken quickly to ensure fast repair times.

Modules shall be connected by uniform control and power supply lines. Internal control and power connections shall be made via clearly identified plug-in connections. Plugs and receptacles shall be keyed to prevent a module

from being inserted into the wrong receptacle. Each module shall be designed so that it can only be installed in one correct position, and that orientation shall be clear to trained maintenance and servicing personnel. All sources of electrical interference shall be suppressed within the respective module to eliminate all potential EMI-generated deficiencies. A clearly marked wiring diagram shall be located on the inside of the cabinet, which will clearly indicate the connections between each module and the power supplies. The Vendor shall provide a list of all replaceable modules at the Preliminary Design Review for Purchaser review and approval.

Human Factors: Principles of human factors engineering shall be applied throughout the design to facilitate ease of use and safety for Customers, employees, and service personnel. The equipment shall provide Customers with displays, graphics and signage, controls and mechanisms that are simple to use, easy to understand, and conveniently located. All Customer interfaces shall be user-friendly; that is, safe, predictable, simple to use, and in accordance with other applicable human engineering principles. By following instructions given on and by the equipment, an inexperienced Customer must be able to quickly understand all types of media purchase options and the pass initialization process. All equipment controls and operating mechanisms shall be operable with one hand, without requiring tight grasping, pinching, twisting, force, or pressure. Equipment and other elements of the system to be used by Purchaser users shall accommodate a broad range of potential Customers. These shall include, but not be limited to, commuters, shoppers, accompanied children, occasional users traveling to and from special events, the elderly, Customers with motor and/or sensory impairments (e.g., Customers in wheelchairs, with limited dexterity, or who are hearing or sight impaired) and Customers with limited communication skills.

Privacy Policy: Personal data will be encrypted in data bases. The system will also be required to perform anonymization of personal data. Personal data may not be stored outside of Sri Lanka. In all cases, Sri Lankan law shall not be infringed by the Supplier and the data collected, stored and processed by the RTRS system shall serve a clear and documented purpose. As soon as they stop being needed, all personal data shall be deleted from the RTRS System and destroyed.

The system shall be constructed in such a way that it will be possible to add additional functionality at a later stage. Additional functionality that may be considered later includes:

Contactless EMV: There are no plans to include contactless EMV, across the SLR network currently. However, at a later stage it may be decided that this will be implemented. The Vendor should indicate how the systems that is implemented can be upgraded, including front end and back end systems, as well as approvals and certifications necessary, to allow for EMV acceptance.

5 Specific Requirements

This section describes the requirements for the RTRS system and the performance levels which are to be achieved.

Bidders to note:

Bidders must clearly explain in their Bid how their proposed solution meets the Employer Requirements stated in this SOR. M = Mandatory; D = Desirable

5.1 Business Requirements

Note: Bidders must state clearly in their Bid how the proposed solution meets the following business requirements:

Req No	Requirement Summary	Business Requirement Description	M or D
1	Business Function – Ticketing System	<ul style="list-style-type: none"> a) Be simple, quick and easy for passengers to use b) Provide multiple sales channels and ticket media including paper, mobile and smart card to reduce queuing c) Provide automated ticket sales to speed up data collection and analysis d) Offer multiple payment methods to reduce cash e) Integrate with other transport modes to provide one ticket for multi-modal travel f) Provide better operational information in a shorter timeframe g) The Standards to be followed and fulfilled are listed in 4 Guiding Principles – 4.1 Standards. 	M M M M M M M
2.	Business Function – Luggage and Parcel System	<ul style="list-style-type: none"> a) Computerise the receipt issuing process b) Introducing a barcode and tracking system for luggage and parcels c) SMS alert system for customers so they can track their parcels and luggage d) Registered customer portal to handle regular customers e) Parcel delivery to the customers' front door f) Packing facility at major stations g) Security tapes 	M M M M M M
3.	Performance Requirements	<ul style="list-style-type: none"> a) System can support peak passenger flows in stations of 500,000 at peak times b) Minimum 30 ticket type need to be produced at each station c) Storage requirements for annual sales of 200 million tickets d) Query response time is less than 10 seconds 	M M M M

5.2 Functional/Technical Requirements

i. RTRS System General Requirements

Note: Bidders must clearly state any specific prerequisites, especially technical ones that must be addressed for the required functionality of the proposed solution even if it is deemed not in scope by this document

Req . No	Requirement Summary	Functional/Technical Requirement Description	M or D	Referen ce Page number
1	System Architecture	The Bidder shall describe and provide a System Architecture for the RTRS system that covers all the stations within the Sri Lankan Railways network.	M	
2	Functional Architecture	The Bidder shall present a functional architecture illustrating and describing how the elements function and interact with one another. The RTRS System must be based on the International Standards listed in	M M	

Req. No	Requirement Summary	Functional/Technical Requirement Description	M or D	Reference Page number
		this document. The proposed system must be engineered and implemented as to support the entire SLR network.	M	
3	System Architecture	The Bidder shall present a functional architecture illustrating and describing how the elements function and interact with one another. The system must be scalable for future extensions.	M M	
4	Availability	The Bidder shall propose an RTRS solution that will provide a System Availability of 99.98%	M	
5	Reliability	The Bidder shall provide existing statistics of their RTRS system availability and reliability of their equipment currently in use in other similar locations. The statistics shall include the MTBF (Mean Time Between Failures) and MTTR (Mean Time To Repair). The above statistics must be included in the monthly Maintenance Meetings with analysis.	M M M	

ii. Media

Req No.	Requirement	Requirement Description	M or D
1.	Media	This section provides the specifications of the different fare media that will be used in the new ticketing system. This covers the security of the ticketing media as well as the content and the format of the fare products hosted on the fare media. As detailed in the following sections, some of these media are covered by TAP TSI, UIC and CIT standards. Some media are used to host different types of products. For instance, paper tickets and concession cards will use the same RCT2 paper medium. Similarly, A4 paper sheets will be used for home-printed tickets and vouchers for vehicle carriage. For clarity purposes, they have been considered as different media in the functional specifications.	M M M
2.	Paper Ticket – Secured Paper	RCT2 paper ticket will be distributed by SLR point of sales (POS) located at each station.	M
2.1	Format	Secured paper tickets shall be formatted according to the RCT2 format specified in TAP TSI Technical Document B.6 (which mirrors UIC leaflet 918 - 2). Different formats will be used, namely, <ul style="list-style-type: none"> RCT2 NRT ticket for local journeys RCT2 GRT ticket for local group tickets. The TAP TSI/UIC specifications describe the structure of RCT2 ticket as a grid of rows and columns, where the rows and columns are used to identify printable areas, dedicated to the printing of the ticket information (departure and arrival station, price, etc.).	M M M M

Req No.	Requirement	Requirement Description	M or D
		Additionally, the tickets shall comply with the requirements GTT-CIV published by the CIT. These specifications impose certain requirements such as the language of some ticket elements (e.g. stations, type of transport documents).	
2.2	Content	<p>The required, optional and conditional content of the ticket is specified in TAP TSI Technical Document B.6.</p> <p>This section provides the minimal content of the tickets that will be distributed, according to the four ticket formats (NRT and GRT).</p> <p>The individual ticket (NRT) shall include at least the following data:</p> <ul style="list-style-type: none"> • Details of validity of ticket • Number of adults and/or children • Date/time of departure and arrival • Departure and arrival station • Detail of class • Name of intermediate stations, if any • Number of passengers per tariff used • Details of price • Tariff designation (e.g. special condition) 	M M M
2.3	Group Ticket	<p>The group ticket (GRT) shall include one ticket for the group head and countermarks distributed to each group member. These two transportation documents shall include at least the following data:</p> <p>Group Ticket:</p> <ul style="list-style-type: none"> - Details of validity of ticket - Name of the group - Total number of passengers - Date/time of departure and arrival - Departure and arrival station - Name of intermediate stations, if any - Number of passengers per tariff used - Details of price in the national currency - Tariff designation (e.g. special condition) <p>Countermarks:</p> <ul style="list-style-type: none"> - Name of group - Date/time of departure and arrival - Detail of class - Details of price in the national currency 	M M M
2.4	IRT Ticket	<p>IRT tickets include transportation data and reservation data. Because this transportation document is closely linked with a reservation, some of this data are specified in both documents. IRT tickets shall contain at least the following data:</p> <ul style="list-style-type: none"> • Passenger's full name • Number of adults and/or children • Number of seats/berths • Date/time of departure and arrival (formatted according to TAP TSI Technical Document B.5). • Departure and arrival station • Name of intermediate stations (if any) • Detail of class (cf. TAP TSI Technical Document B.5) 	M

Req No.	Requirement	Requirement Description	M or D
		<ul style="list-style-type: none"> • Reservation data: train number, coach, seat/berth, numbering of seats/berths, compartment booked (if any). Format of these data follow TAP TSI Technical Document B.5. • Number of passengers per tariff used • Tariff designation (e.g. special condition) 	
2.5	Security	<p>All ticket types described in the TAP TSI/UIC specifications are designed to be printed on blank paper coupons with security background and issued electronically. It is required that the blank paper coupons comply with the specifications GTT-CIV, published by the CIT. This document specifies the physical attributes of coupons, which include the types and quality of paper, security features integrated in the body paper, mandatory reference colours, copyright, and dimensions for paper tickets.</p> <p>The blank RCT2 tickets may be provisioned completely blank or pre-printed. In both cases, the tickets shall contain the stock number and the security background.</p> <p>To avoid frauds and to perform stock control every coupon must be numbered, and the use of number ranges must be controlled.</p>	M M M
3	PoS Thermal Paper Ticket – Unsecured Paper	<p>For ticket, valid on the day of ticket purchase, the fare products will be printed on unsecured paper.</p> <p>No standard applies to the format, the content or the security aspects related to this type of tickets. The next three sections provide requirements and recommendations regarding these three issues.</p>	M M
3.1	Format	<p>The ticket data shall be printed onto the paper ticket in two different forms.</p> <ul style="list-style-type: none"> • As alphanumeric text. • As a barcode. <p>The barcode will allow automatic inspection of the ticket by the on-board inspection equipment and provides security data, ensuring the authenticity of the issuer.</p> <p>a Alphanumeric text</p> <p>The ticket data shall be available in a human-readable format to allow a visual inspection of the ticket by the ticket inspection staff.</p> <p>Visual inspection should be considered as a first level of inspection as no verification of the ticket integrity and the ticket issuer is performed.</p> <p>b Barcode</p> <p>In addition to the alphanumeric text format, the ticket data shall be available in a barcode. This barcode will also contain a digital signature.</p> <p>The ticketing system supplier may choose a barcode symbology among one of the most widespread. These are: Aztec, QR-code and PDF-417 symbology. Aztec and QR-code symbologies offer more capacity (respectively up to 4296 Bytes and 3067 Bytes), while PDF-417 symbology takes less vertical space.</p> <p>The ticketing supplier may consider compressing the ticket data before converting them into a barcode. For this, the deflate algorithm (implemented in the gzip format) may be used.</p>	M M M M D D

Req No.	Requirement	Requirement Description	M or D
3.2	Content	<p>The ticket data shall contain at least the following information:</p> <ul style="list-style-type: none"> • Origin and destination. • The price of the fare product. • The specific price condition that applies (if any). • Detail of class <p>For open ticket</p> <ul style="list-style-type: none"> • The validity period of the ticket. <p>For non-exchangeable ticket</p> <ul style="list-style-type: none"> • The train number. • The train departure and arrival date. <p>For ticket with reservation</p> <ul style="list-style-type: none"> • The train number. • The train departure and arrival date. • The reservation details: seat number, carriage number. • Optionally, the passenger's full name. <p>Because the paper cannot prove the authenticity of the issuer (in contrary to blank GTT-CIV compliant RCT2 coupon), additional signature data shall exist to prove the integrity of the ticket data and the authenticity of the ticket issuer, as described in the next section.</p>	<p>M</p> <p>M</p> <p>M</p> <p>M</p> <p>M</p>
3.3	Security	<p>The ticket shall contain a digital signature of the ticket data. This ticket signature shall be verified by the ticket inspection equipment.</p> <p>Signature Issuance The signature may be generated on the entire ticket data or a part of it. As a preliminary step to the signature, the ticketing supplier may also apply a cryptographic hash algorithm (e.g. SHA-2) on the ticket data, to reduce the length of data on which the signature algorithm is applied.</p> <p>The digital signature shall be added into the barcode data, along with the ticket data so that it can be conveniently read and verified by the ticket inspector staff.</p> <p>Key Management Digital signature can be generated using symmetric and asymmetric cryptography. These two approaches differ by the way the signature is generated and issued; while symmetric cryptography (e.g. DES, AES) uses the same key to issue and to verify the signature, two different keys are used in asymmetric cryptography (e.g. RSA, DSA, and Elliptic curve).</p> <p>The ticketing supplier may consider using asymmetrical cryptography. Each POS will contain a different private key that will be used to sign the ticket data.</p>	<p>M</p> <p>M</p> <p>M</p> <p>M</p> <p>M</p>
4	Hand Held Terminal Thermal Paper Ticket	<p>This media will be distributed by the on-board equipment and light POS equipment.</p> <p>It will host the same fare products as the POS thermal paper ticket medium. In that respect, the format and content are identical to the POS thermal paper ticket. The security may however be considered differently.</p>	<p>M</p> <p>M</p>

Req No.	Requirement	Requirement Description	M or D
4.1	Security	<p>a Signature issuance</p> <p>The signature may be generated on the entire ticket data or a part it, using a cryptographic hash algorithm (e.g. SHA-2) combined with a signature algorithm.</p> <p>The digital signature shall be added into the barcode data, along with the ticket data so that it can be conveniently read and verified by the ticket inspector staff.</p> <p>b Key management</p> <p>The ticketing system supplier may simply consider using a symmetrical shared key between all the terminals and define a short validity period for this key (e.g. every month).</p> <p>A renewal process shall also be implemented so that a new key is shared by all the inspection terminals. This renewal process shall include a temporary period during which the old key and the new key are active.</p>	M M
5	Home Printed Ticket	<p>Home-printed tickets will be distributed for long distance journeys, with or without reservation.</p> <p>The use of home-printed ticket is standardized in the document TAP TSI Technical Document B.7 (which mirrors UIC leaflet 918 - 3). This standard describes the use of home-printed tickets in an international context. It covers the format of the ticket (e.g. lay-out, size), the inspection and security mechanisms (e.g. certificate).</p>	M M
5.1	Format	<p>The ticket is printed on an A.4 paper sheet and contains three main zones, namely:</p> <ul style="list-style-type: none"> • Ticket data zone: contains the RCT2 ticket lay-out. It comprises the information concerning the journey and the ticket as specified in TAP TSI Technical Document B.6, information which is used by the undertakings to control the journey. The ticket data may also comprise the reservation data, in this case the ticket lay-out shall follow the IRT ticket format. • Reservation zone: contains reservation information, if it is not included in the ticket data. • Certificate zones: contains certificates that are generated either by the ticket distributor and/or the ticket controlling organizations (TCOs). Three types of certificates shall be used: alphanumeric, 1D-barcode or 2D-barcode. <p>The ticketing supplier is free to include the reservation detail in the ticket data zone or in the reservation zone.</p>	M M M D
5.2	Security	<p>Home-printed tickets are distributed on unsecured paper which does not guarantee the integrity of the data nor the authenticity of the issuer.</p> <p>a Certificate issuance and verification</p> <p>In TAP TSI Technical Document B.7, three solutions exist. There are referred to as "Carrier makes certificate", "Carrier keeps contract" and "Digitally Signed Ticket".</p> <p>The ticketing system supplier is free to use the implementation of its choice. The gzip implementation may be seemed as an appropriate choice for that purpose.</p>	M M

Req No.	Requirement	Requirement Description	M or D
		The Aztec 2D-barcode standardized in the specifications has 17 layers which gives a maximum capacity of 621 bytes.	
6	Mobile Ticket	No standard currently applies to the format, the content or the security aspects related to the use of m-tickets.	
6.1	Format	<p>The ticket data shall be available to the ticket inspector staff in two different ways.</p> <ul style="list-style-type: none"> • As alphanumeric text. • In a barcode. <p>The barcode will allow automatic inspection of the ticket by the on-board inspection equipment. It will also allow security mechanism (i.e. digital signature) to be added to protect the distribution of the tickets.</p> <ul style="list-style-type: none"> • Alphanumeric text <p>The ticket data shall be read visually to allow a first level of inspection of the ticket, in a similar way as the inspection of a traditional paper ticket.</p> <ul style="list-style-type: none"> • Barcode <p>In addition to the visual ticket data, the m-Ticket shall comprise a barcode, which includes the ticket data and a digital signature.</p>	M M M M
6.2	Content	<p>The ticket data shall contain at least the following information:</p> <ul style="list-style-type: none"> • Departure and arrival station. • Validity period of the ticket. • The specific discount that applies, if the price is subject to discount. • Detail of class. • Train number 	M
6.3	Security	The barcode shall include a signature to prove the integrity of the data and the authenticity of the issuer. The signature process shall rely on an asymmetrical cryptographic scheme	M
6.4	Inspection	<p>The visual inspection shall provide a quick way of assessing the ticket validity visually, while automatic inspection will use the information in the barcode to assess the ticket validity and integrity.</p> <p>Automatic inspection will require the barcode to be scanned and will require the on-board terminal to process and display the data read. In this mode, the ticket validity is proven based on the information provided in the barcode, which are the ticket data and the digital signature.</p>	M M
7	Smart Card	The smart card will be a SLR branded smart card that uses contactless technology.	M
7.1	Format	<p>The smart card will be provided on smart media. The smart media will most likely take the form of a smart card which should comply with the following mandatory international standards:</p> <ul style="list-style-type: none"> • ISO/IEC 7816 which defines the cards physical properties as well as its interfaces 	M

Req No.	Requirement	Requirement Description	M or D
		<ul style="list-style-type: none"> ISO/IEC 14443 which defined the physical communications interface to the card CEN TS 16794 <p>There may be additional branding on the outside of the card.</p>	M
7.2	Security	<p>The card readers will comply with the following security standards:</p> <p>ISO/IEC 7816-9 Identification cards – Integrated circuit(s) cards with contacts – Part 9: Additional interindustry commands and security attributes</p> <p>ISO/IEC 7816-15:2004 +Amd A2:2008 Identification cards — Integrated circuit cards —Part 15: Cryptographic information application</p> <p>ISO/IEC 9798-2: 2008 Information technology – Security techniques – Entity authentication – Part 2: Mechanisms using symmetric encipherment algorithms</p> <p>ISO/IEC 9798-2:2008/Cor 3:2013 Information technology — Security techniques — Entity authentication — Part 2: Mechanisms using symmetric encipherment algorithms</p> <p>ISO 15408: 2008 Information technology — Security techniques — Evaluation criteria for IT security (Common Criteria)</p>	M
7.3	Inspection	The smart card will allow the Inspector to read the details from the card so that it can be checked to determine if it has been correctly used to pay for travel	M
8	Penalty Notice	<p>The on-board equipment will allow the issuance of on-the-spot penalty fare notices. The penalty shall be printed by the thermal printer, part of the on-board equipment.</p> <p>The format of the fine notice shall only contain alphanumeric characters. The supplier to implement the format of its choice.</p> <p>It shall contain at least the following data:</p> <ul style="list-style-type: none"> Date and time when the fine was imposed. Amount due. Deadline date for payment. Short description of the reasons (this shall be pre-configured in the on-board terminal). Identifier of the fine notice (that will be entered when paying the penalty fare). 	M M M

iii. Central System

Req No.	Requirement	Requirement Description	M or D
9	System Overview	<p>The ticketing back-office system will be at the core of the ticketing system. The ticketing back-office is comprised of several functional modules including:</p> <ul style="list-style-type: none"> Inventory module Fare policy management module Booking module Data collection and reporting module 	M

Req No.	Requirement	Requirement Description	M or D
		<ul style="list-style-type: none"> • Front-office equipment supervision module • Customer and profile management module • Journey planning module • Price engine module • Clearing and settlement module • Administration module • Accounting module • Manual ticket entry module • Parcel / Luggage tracking <p>These modules are defined for clarification purposes and do not suggest that the final solution should be designed in this way. The ticketing system supplier may decide to merge some modules together (or split some into several modules), according to his design. The new system shall comply with the functional requirements described in the remainder of this section.</p>	
10	Inventory module	<p>The ticketing system shall allow SLR administrators to manage an inventory of the transportation resources that are available. These resources comprise the routes (e.g. stations, lines, etc.), trains (timetable, route, etc.), the carriages (type, number, etc.) and the seats (type, locations).</p> <p>The inventory shall cover all resources related to commuter and long distance trains. Some of these resources may be subject to reservation. Consequently, the inventory shall be closely coupled with the booking module.</p> <p>The inventory should contain, at least, the following:</p> <ul style="list-style-type: none"> • Routes and stations inventory <ul style="list-style-type: none"> ○ Stations (location, distance between the station, and identification of the stations). ○ Routes definitions (stations that are part of the routes, distance between the stations). • Train inventory <ul style="list-style-type: none"> ○ Routes on which the train operates. ○ Departure and arrival station. ○ Timetable (departure and arrival time at each station). ○ The dates when the train operates. ○ Type of train: seat reservation required (Long Distance train) or no reservation required (Commuter trains). ○ Lay-out of train carriages (number, type, class). ○ The availability of the carriages within the route (e.g. a carriage may not be part of train during the entire route). ○ Train type (e.g. high speed). • Carriage inventory <ul style="list-style-type: none"> ○ Type of carriage (e.g. seat, bar, vehicle). ○ Carriage characteristic (i.e. 1st, 2nd, 3rd, class, smoking/non-smoking, compartment/non-compartment). <p>For train requiring seat reservation, each carriage shall comprise an inventory of the seats and vehicle capacity:</p> <ul style="list-style-type: none"> ○ Inventory of seats 	<p>M</p> <p>M</p> <p>M</p>

Req No.	Requirement	Requirement Description	M or D
		<ul style="list-style-type: none"> ▪ Location of the seats (i.e. row number, compartment location), ▪ Seat type (i.e. window, corridor) ▪ The applicable fare. ○ Inventory of vehicle capacity (for vehicle transportation carriage) 	
11	Fare policy management module	<p>The fare management module will manage fares for SLR-operated transport (i.e. Commuter journeys and Long Distance journeys).</p> <p>Management of fares involves creation, update, export and deletion of fares.</p> <p>a Fares for Commuter and Long Distance Routes</p> <p>This module manages all the fares that are available on the SLR railway network. It is closely linked to the Inventory module. Distance-based and route-based fares shall be supported by the system.</p> <p>A fare should be defined at least by the following:</p> <ul style="list-style-type: none"> • Fare description (in English, Tamil and Sinhalese). • The period during which the fare is applicable. • The origin and destination of the journey (for route-based fares). • The price: <ul style="list-style-type: none"> ○ The price for 3rd class, 2nd class and 1st class per kilometre (for distance-based fares). ○ The route price (for route-based fares). • Fare conditions <ul style="list-style-type: none"> ○ Carriage type to which the fare is applicable (e.g. 1st class, 2nd class or 3rd Class). ○ Period during which the fare is applicable (start date and end date). ○ Whether a particular status (e.g. age, SLR staff etc) is required. • After-sales conditions: <ul style="list-style-type: none"> ○ Exchange conditions (e.g. exchange period, fee, number of exchange allowed). ○ Refund conditions • The distribution channel where the fare is available <p>The fares are communicated to the front-offices equipment, the online product selling server.</p> <p>The fare management shall include creation, update, export and deletion of fares and shall be implemented via a simple interface to allow for changes to be made quickly.</p>	<p>M</p> <p>M</p> <p>M</p> <p>M</p>
12	Booking Module	<p>The booking module shall be accessed from SLR's distribution channels and potentially third party providers authorized by SLR to retail tickets.</p> <p>The reservation system shall support reservation of supplement such as luggage or parcels as defined by SLR.</p> <p>The reservation of vehicle carriage shall also be supported by the booking module.</p> <p>The booking module shall support pre-reservation to allow a user-friendly purchasing process from the online product selling web site and the SLR POS.</p>	<p>M</p> <p>M</p> <p>M</p>

Req No.	Requirement	Requirement Description	M or D
		<p>There are no mandatory requirements for the ticketing system to support over-booking. The booking module shall allow the facility for an upper limit for the number of seat reservations that can be sold for each train's inventory. This limit can be changed manually at any time from the date of the beginning of ticket sales until departure date</p>	<p>M M M</p>
13	Data Collection and Reporting Module	<p>The data collection and reporting module centralizes all information collected by the front-office equipment and all the systems that are part of the back-office ticketing system. The new ticketing system should support as many measurements as possible.</p> <p>Based on this data, it shall be possible to create custom reports easily. These reports shall be either displayed through the web interface or written into a report file.</p> <p>The visualization of the extracted data shall be possible with the use of standard charts (e.g. histogram, bar chart, pie chart, line chart).</p> <p>Report files shall be generated instantly or in a periodic way. The frequency of the generation shall be configurable. The report format shall, at least, include CSV, XML, XLS and PDF.</p>	<p>M M M M</p>
14	Front-office equipment supervision module	<p>The front-office equipment supervision module shall be connected to each front-office equipment (hand-held terminals and POS) to provide information regarding its status.</p> <p>The status can be one of the following "running", "out-of-service" or "fall-back mode". The status shall be displayed in such a way that the entire front-office equipment status can be visualized easily.</p> <p>It shall also be possible to set alerts in relation to the status. In such way that a status change (e.g. from "running" to "out-of-service") triggers an alarm. The alarms shall be displayed and stored for audit purposes.</p> <p>This module shall also manage remotely the main software application that are hosted on the hand-held terminals. For instance, the update of an application could be managed remotely and centrally by the back-office ticketing system. The application that shall be subject to remote-installation and configuration are those which require frequent updates.</p> <p>OS updates may also be handled remotely by the front-office equipment supervision module.</p>	<p>M M M M M</p>
15	Customer and profile management module	<p>The ticketing back-office system shall implement a light-weight CRM system, to allow the management of customers. This involves creation, update and deletion of customer details.</p> <p>The customer details include at least the following data:</p> <ul style="list-style-type: none"> • The customer basic details such as name, surname, address, email. • The banking details if automatic debit has been set up. • The profile of the customer that entitles him to specific prices. • History of purchased tickets, purchased card distribution etc. • History of payment transactions. • A link to his/her customer data on the online product selling server (if any). <p>The access to the customer information shall be protected through user privilege, which are defined via the administration module.</p>	<p>M M M</p>

Req No.	Requirement	Requirement Description	M or D
16	Journey Planning Module	The journey planning module shall ensure the computation of Long Distance journey itineraries. The module shall respond to itinerary requests (by the ticketing system or online product selling server) and provide the most suitable journey.	M
17	Price Engine Module	The ticketing system shall be able to compute the price for a Long Distance journey based on the current fare data. For this, the ticketing system shall integrate a price engine module that will compute, for a given itinerary and based on the price information available in the fare table, the itinerary price.	M
18	Clearing and Settlement Module	In future, there may be instances when tickets are sold on SLR that can be used on other modes of transport. All tickets sold by SLR for non-SLR operated transport and tickets sold by other Transport Operators for SLR-operated transport, will require settlement. The Central System will require the functionality to enable settlement to happen between multiple operators in a quick and convenient manner according to the business rules agreed by the relevant parties.	M M
19	Administration Module	The administration module manages all users that are provided with access to the ticketing system. Each user shall be able to log into the ticketing system using individual credentials. The back-office system should manage the following user groups: <ul style="list-style-type: none"> • SLR staff operating the STO at each station. • SLR maintenance team. They perform maintenance task on the front-office equipment (hand-held terminals and STO). • SLR ticketing system administrators. They administrate the system (manage users, grant privileges to users, etc.). • SLR ticketing system operator. They operate the system: generate report, create new fares, connect to the supervision interface, etc. • SLR inspectors. • SLR accountants The system shall allow the creation of new groups easily.	M M M M
20	Accounting Module	The ticketing system is expected to provide an interface for SLR's accounting tools. This interface shall provide the functionality to export the following minimum data from the ticketing system to the accounting system: <ul style="list-style-type: none"> • Revenues from fares distribution by SLR. • Revenues from parcels and luggage transported by SLR • Fraud related data (payment follow-up of the fines issued by the conductors). The actual design of this interface shall be defined with the future selected supplier of SLR's ticketing system based on inputs provided by SLR's revenue control teams.	M M M
21	Manual Ticket Entry Module	If for any reason the distribution of tickets cannot be carried out from a POS or a handheld sales device, the STO staff or the inspector will issue tickets manually. In this case, the ticket's details will be written manually to a blank ticket and a copy of this ticket will be kept at the station or by the on-board inspectors. The system shall allow such tickets to be manually entered into the system (for reporting and accounting purposes). A visual interface shall allow an operator to enter the ticket copy's details into the manual ticket entry module.	M M

Req No.	Requirement	Requirement Description	M or D
22	Parcel and Luggage Tracking	<p>This module will allow for the registering of parcels and luggage that are to be transported on SLR.</p> <p>When a parcel or item of luggage is accepted by the system the following information will be recorded as a minimum:</p> <ul style="list-style-type: none"> • Date and time • Location of receipt of parcel / luggage • Staff id receiving parcel / luggage • Weight of luggage / parcel • Destination • Charge (1st class, 2nd Class etc) • Parcel /luggage ID number • Name of sender • Name of person receiving parcel / luggage • Required delivery time • Supplement e.g. for faster delivery • Train parcel / luggage will be transported on (route no, car location etc) • Intermediate points on the journey, e.g. storage facilities, vehicle ID, etc) • Location parcel / luggage delivered to • Delivery time of parcel / luggage • Details of person receiving parcel / luggage <p>Other data information may be necessary to be collected and stored to enable the process to operate efficiently. This will be agreed with the system provider during the detailed design stage.</p> <p>The system shall allow the parcel / luggage to be tracked on-line via a web portal so the customer can check progress of the parcel / luggage.</p>	M M M M
23	Non-Functional Requirements		
23.1	Modularity	The back-office ticketing system shall be designed in a modular way. This means that the functionalities of the ticketing system shall be separated into independent and easily updatable modules, such that each module contains everything required to execute only one functionality. In this way, upgrading the booking module for instance shall have as minimum impact as possible on the other modules (e.g. inventory module or the customer management module).	M
23.2	Extensibility	The interface between the front-office equipment and the ticketing system back-office shall be based on standard protocols (e.g. SOAP, REST, XML or JSON) and be thoroughly documented by the ticketing supplier.	M
23.3	Scalability	<p>The new ticketing system shall be capable of supporting future growth of passengers. To achieve this, the ticketing system shall be able to scale horizontally: increasing the capability of the ticketing system should be achieved by adding hardware.</p> <p>From a software perspective, this requires that the modules of the ticketing back-office that are affected by traffic increase shall be capable of operating in cluster mode. The scalability requirements therefore only apply to the modules, for which a growth in passenger traffic leads to a significant growth of the module usage (e.g. the booking module).</p>	M M
23.4	Availability	The ticketing system shall have a suitable level of redundancy to meet a minimum of 99.8% availability.	M
23.5	Security	The security mechanisms required between the back-office systems and internal remote equipment (i.e. POS equipment, on-board equipment, mobile application and Internet web browsers) shall be sufficient to ensure the integrity of the data collected	M

Req No.	Requirement	Requirement Description	M or D	
		and protect the system from external attack. Further details are described in later sections of this document. Additionally, the back-office systems shall ensure that sensitive data are encrypted within the data-base (e.g. customer credentials, bank account identifiers for direct debit, etc.).	M	
23.6	Reports	The following reports shall be provided by the contractor.		
		Report	Frequency	Content
		Operational reports	Daily	Customers numbers by route Route miles covered Number of validations per route Complaints per operator Downtime of the back-office system, website, mobile application and Ticket medium failure rate Fraud detected Fares distributed per channel Inventory: <ul style="list-style-type: none"> • Paper in stock and ready for distribution for paper ticket • Smart Cards in stock and ready for distribution
		Aggregated operational reports	Monthly	Monthly consolidation of the daily reports content. Downtime of the back-office system, website, mobile application and to the targets
		Financial reports	Daily	Revenues report by: <ul style="list-style-type: none"> • Route • Distribution channel Settlement of amounts due by/to distribution agents Payment receipts reports providing at least: <ul style="list-style-type: none"> • Payment mean used • Date and time of transaction • Receipt number • Product(s) sold Sales reports providing at least: <ul style="list-style-type: none"> • Fare product • Distribution channel and agent that performed the sale • Associated payment receipt Fines reports providing at least: <ul style="list-style-type: none"> • Date and time of issue • Agent who issued the fine • Fine number • Reason • Amount • Payment status • Associated payment receipt (if applicable)
Aggregated financial reports	Monthly	Monthly consolidation of the daily reports content.		

iv. Online Ticket Selling Website

Req No.	Requirement	Requirement Description	M or D
24	System Overview	The online ticket selling web site will allow customers to purchase passenger tickets for Long Distance journeys, top-up or renew PAYG and Commuter Season Tickets, issue staff travel cards and Warrants, consult train timetables, and reserve seats. This section addresses the functional and non-functional requirements of the online product selling web site.	M
25	Funcional Requirements		

Req No.	Requirement	Requirement Description	M or D
25.1	Informing	The online ticket selling web site shall provide information regarding the train schedules as well as the fare offers and price conditions. Customers shall additionally be able to enquire about train and seat availability.	M
25.2	Payment	<p>The online ticket selling web site shall rely on a Payment Service Provider (PSP), which shall be the National Payment Gateway, to acquire payment transactions through the web site.</p> <p>For this, the following mechanism shall be implemented:</p> <ul style="list-style-type: none"> • The customer chooses the tickets he wants to purchase and confirms the selection. • The customer is directed to the payment gateway website to carry out the payment process. • Upon confirmation of the payment by the payment service provider, he is directed back to the online ticket selling web site. • The payment gateway server informs the online ticket selling server about the payment process. <p>The online product selling server shall not save or forward credit/debit card data (this would require compliancy to the PCI standards).</p> <p>A transaction receipt shall be shown to the customer and sent by eMail. The transaction details shall be included (e.g. ticket price, the date of the transaction, etc.).</p>	M M M M
25.3	Distribution	The web site shall generate and distribute tickets that can be printed at home / office by the customer.	M
25.4	Enrolment	<p>The web site may optionally offer the possibility for the customer to set up an account with SLR. This would allow him/her to:</p> <ul style="list-style-type: none"> • Assign log-in/password to a customer. • Store personal information (e.g. current active concession cards). • Store history of purchased products. • Improve the user-experience (e.g. personal preference configuration, one-click payment if supported by PSP). 	
25.5	Reservation	<p>The web site shall allow seats to be reserved. When booking a seat for Long Distance journeys the web site shall display the available seats in a graphical way; the passenger should then be able to select his seat based a graphical display of the carriages.</p> <p>The reservation should be performed, at least, based on the following parameters.</p> <ul style="list-style-type: none"> • Departure station; • Destination station; • Single ride or return trip; • Journey date(s) and time(s); • Train preference(s): 1st or 2nd class, seat preferences (e.g. near window, near corridor, observation car etc.); <p>The web site shall allow the pre-reservation of tickets to allow concurrent reservations by different customers from the selection of the journey until the payment is confirmed. The related seats shall be pre-reserved to lock out other customers from reserving the same seats. A time-out mechanism shall</p>	M M M

Req No.	Requirement	Requirement Description	M or D
		<p>be implemented so that a pre-reserved seat or berth, is released if the payment has not been confirmed after a certain period.</p> <p>Cancelling the purchasing process by the customer shall also release the pre-reserved tickets.</p> <p>Additionally, the web site shall allow reservation of vehicle carriage and multiple ticket for groups (known as group booking).</p>	M M
25.6	Penalty Fare Collection	<p>The web site shall allow a passenger to pay a fine that he/she may have had imposed during an unauthorized journey.</p> <p>For this, the following synoptic shall be implemented:</p> <ul style="list-style-type: none"> The passenger enters the identifier printed on the penalty notice (e.g. list of digits). The web site retrieves the penalty details from the ticketing back-office system. The passenger carries out the payment process 	M M
26	Non-Functional Requirements		M
26.1	Modularity	The online product selling web site shall be as independent as possible from the ticketing back-office system. In such way, that these two systems may be upgraded separately.	
26.2	Scalability	<p>The online product selling web site will be heavily exposed to web traffic; a growth in passenger traffic will lead to a significant growth of the web site usage.</p> <p>As for the ticketing system, the online product selling web site shall be designed to operate in a cluster mode, so that it can scale horizontally. In such way, that increasing the web site capacity should be achieved by adding hardware.</p>	M M
26.3	Availability	The ticketing system shall have a suitable level of redundancy, to meet a minimum of 99.8% availability.	M
26.4	Security	The tickets that are distributed by the web site shall include a digital signature to certify the authenticity of the issuer and the integrity of the data. For this, the server will need to host a key pair to generate this signature.	M
26.5	Future Proofing	<p>The web site application shall be designed according to the n-tier architecture approach, whereby the business logic layer is separated from the presentation layer. In such way that the application could be updated easily to support future browser types (e.g. mobile, tablet) and Internet client-side application.</p> <p>The web site shall also rely on standardized protocol to allow a better interoperability with future browsers. For instance, HTML-based technology should be preferred to Adobe Flash-based technology.</p>	M M
26.6	Supported Languages	The web site shall be available in English, Tamil and Sinhalese.	M
26.7	Portability	The web site shall be accessible on PC browser, tablet and smartphone. A dedicated and optimized version shall exist for smartphone browser. This version shall ensure a convenient user-experience for users accessing the web site from a mobile browser.	M

v. Mobile Phone Application System Requirements

Req No.	Requirement	Requirement Description	M or D
27	System Overview	The mobile application will provide an optimized interface to the online product website. It will allow the distribution of the same products and cover the same features, with the following differences:	M
		<ul style="list-style-type: none"> The mobile application will use a different and optimized format for the tickets and vouchers, as described later in this document 	M
		<ul style="list-style-type: none"> Penalty fare collection will not be supported. 	M
		This section provides specifications of the mobile phone application system. These specifications are supplemented by the description of the distribution channels provided in later in this document	
28	User Scenarios	The mobile application shall support two main scenarios: enrolment and ticket selection.	M
		Firstly, the customer downloads the application from the appropriate application repository. Upon the first execution of the application, the user may be requested to enrol to the service. During this process, the user creates credentials and the user account is generated.	M
		As for the online product selling web site, the customer will be allowed to browse through the available tickets. Subsequently to selecting a ticket, the user will be taken through the payment process and the purchased ticket will be added to the ticket wallet. The ticketing supplier may decide to implement “1-click” payment to ease the payment process.	M
		The ticket will be distributed in the form of an m-ticket (i.e. mobile ticket) comprising of bar-codes and alphanumeric text. Mobile tickets will be inspected on-board by the SLR inspection staff.	M
29	Functional Requirements		
29.1	Application Download	The application shall be available from the appropriate public application repositories (e.g. Apple “Appstore” or Google “Playstore”).	M
29.2	Enrolment	As for online product selling website, the mobile application may optionally offer the possibility for the customer to enroll to the service, as described previously	M
29.3	Ticket Selection	The user shall have access to the list of the Commuter and Long Distance tickets available for purchase. The user shall also have access to the specific fares that he/she is entitled, depending on his/her profile.	M
29.4	Reservation	As for the online ticket selling web site, the mobile application shall allow seats to be reserved.	M
29.5	Payment	The mobile phone application shall support payment acquisition through a PSP, in this case it will be the National Payment Gateway. As for the online ticket selling server the PSP will be implemented in such way that the payment details are not stored or forwarded by the SLR ticketing system.	M
		To offer a better user-experience the PSP may support “one-click” payment, so that the users will only enter the credit/debit card details once. During the first purchase, the credit/debit card details will be stored by the PSP. All the subsequent payments will simply require the credit/debit card to be selected from the application.	D

Req No.	Requirement	Requirement Description	M or D
		After any successful payment, a transaction receipt shall be sent to the customer by email showing the transaction details (ticket price, the date of the transaction, etc.).	M
29.6	Inspection	The passenger will show the mobile ticket - in the form of bar-code – to the inspector.	M
30	Non-Functional Requirements		
30.1	Security	The tickets that are distributed by the mobile application shall include a digital signature to certify the authenticity of the issuer and the integrity of the data. For this, the server will need to host a key pair to generate this signature. Additionally, the mobile applications and the online product selling server will exchange credential data, which are sensitive data. For this, HTTPS shall be used to secure the communication. This requires a key pair to be generated and a certificate to be ordered from a public certification authority (e.g. Thawte, Symantec, etc).	M M
30.2	Future Proofing	New mobile phone OS shall be introduced easily. For instance, the communication between the mobile applications and the online ticket selling server shall rely on standardized protocol to allow a better interoperability with future mobile phone OS.	M M
30.3	Supported Languages	The mobile application shall be available in English, Tamil and Singhalese.	M

vi. Front Office Equipment

Req No.	Requirement	Requirement Description	M or D
31	Overview	For each front-office equipment (i.e. point of sale equipment and on-board vending and inspection equipment), this section details the main requirements that shall or may be implemented by the solution provider. These comprise functional requirements (i.e. describing the behaviour of the systems) and non-functional requirements (i.e. hardware, scalability, failure management and security).	M
32	Point of Sale Equipment		
32.1	Shift Management	The operator shall securely log into the ticketing application using personal credentials.	M
32.2	Informing	The POS terminals shall provide information about the train schedules as well as the fare offers and price conditions. Customers shall also obtain information regarding their reservations or their profile stored in the back-office. Customers shall additionally be able to enquire about possible train/seat availability.	M M M
32.3	Payment	The POS terminal shall allow tickets to be purchased with credit/debit cards and in cash.	M M

Req No.	Requirement	Requirement Description	M or D
		<p>The POS Terminal shall issue a transaction receipt showing, at least, the transaction information (amount and date) and the Identifier of the POS terminal.</p> <p>When paying with a credit/debit card, a payment terminal shall be used. The payment terminal shall be provided by the acquiring bank of SLR or may be provided by the ticketing system supplier. In all cases, the payment terminal shall be certified by the acquiring bank to make sure that it complies with domestic banking regulations and payment scheme certification requirements.</p> <p>The transaction details shall be reported to the back-office ticketing system.</p>	M M
32.3	Distribution	<p>The POS equipment shall be able to distribute:</p> <ul style="list-style-type: none"> • RCT2 NRT ticket for local journeys. • RCT2 GRT ticket for local group tickets. • Thermal paper ticket for (1) open ticket only valid on the day of purchase and for (2) non-exchangeable ticket related to a train whose departure date is on the day of the ticket purchase. • Smart cards 	M
32.4	Reservation	<p>The POS equipment shall allow seat(s) or berth(s) to be reserved. The reservation should be performed, at least, based on the following parameters:</p> <ul style="list-style-type: none"> • Departure station; • Destination station; • Single ride or return trip; • Journey date(s) and time(s); • Train preference(s): 1st or 2nd class, seat/berth preferences (e.g. near window, near corridor, etc.); <p>The POS equipment shall allow group reservation, so that multiple integrated-reservation tickets purchased at the same time, shall be linked to seats/berths located nearby.</p> <p>The POS equipment shall allow a reservation to be cancelled. This process shall be restricted by the SLR's business rules and the fare policies:</p> <ul style="list-style-type: none"> • This may be performed within an allotted time before train departure schedule (depending on the fare policy); • This may be subject to a penalty (fixed or depending on the ticket price), according to the fare condition. <p>After cancelling or exchanging a reservation, seats that were initially reserved are freed and are available for other reservations.</p> <p>The reimbursement and cancellation conditions shall be set up in the fare policy management module.</p>	M M M M
32.5	Penalty Fare Collection	<p>The user shall be allowed to pay a penalty that he/she was imposed by the ticket-inspection staff during an unauthorized journey. This can be done using payment cards or cash.</p>	M
32.6	Customer Management	<p>The POS terminal shall allow to access the customer's profile recorded in the back-office data-base. Creation, deletion and update of a customer's profile shall be allowed.</p>	M

Req No.	Requirement	Requirement Description	M or D
		<p>A customer profile may be created (or updated) when acquiring:</p> <ul style="list-style-type: none"> • A monthly or annual pass. <p>Customer data comprises, at least the following:</p> <ul style="list-style-type: none"> • User ID, • Name and surname • Customer details (e.g. address, age, email). • Optionally, an ID picture of the customer. <p>The customer shall be able to request the complete deletion of his/her profile. Customer data may be subjected to privacy restrictions based upon local laws.</p> <p>Holders of monthly annual passes shall be able to set automatic direct debit transfers from SLR POS.</p> <p>If requested by the customer, the system shall be able to print his/her relative data.</p>	<p>M</p> <p>M</p> <p>M</p> <p>M</p> <p>M</p>
32.7	Reporting	<p>The system shall provide reports to the back-office. As much as possible information collected at stations, shall be reported to the back-office.</p> <p>This includes at least the following information: ticket sales, payment transactions, distributed tickets, cards, paid penalties, etc. These reports may be sent to the back-office periodically in batch mode or individually in real-time mode.</p> <p>This data will be stored into the ticketing system data-base, so that they can later be used to generate usage reports.</p>	<p>M</p> <p>M</p> <p>M</p>
32.8	Equipment Monitoring	<p>A monitoring mechanism shall be set up so that the back-office system is aware of the POS states. The back-office shall be informed that either:</p> <ul style="list-style-type: none"> • A POS has entered the fall-back mode. The faulty devices should be known to the back-office. • A SLR POS is out-of-service. The technical reasons should also be communicated to the back-office. <p>The POS states shall be displayed at the back-office system for the SLR operating team.</p>	<p>M</p> <p>M</p>
33	Non-Functional Requirements		M
33.1	Physical Description of the Equipment	<p>The equipment shall comprise a payment terminal, a workstation (including a PC, a screen, a printer, a camera, a mouse), a back-up power supply, a customer display, a RCT2 compatible printer and a cash register.</p> <p>The payment terminals shall accept banking cards compliant with EMV cards.</p> <p>This includes: card payment module, PIN Pad and a card reader. The payment terminals shall be EMV certified.</p> <p>Cash payment shall be accepted; this includes collecting, distributing and storing coins and notes.</p> <p>The equipment shall also comprise a secured locker to store unused blank RCT2 secured tickets.</p> <p>A Customer Display shall be available to inform customers about the price of tickets and additional information.</p>	<p>M</p> <p>M</p> <p>M</p> <p>M</p> <p>M</p>

Req No.	Requirement	Requirement Description	M or D
		A camera shall also be part of the equipment to take ID pictures of the customers	M M
33.2	Scalability	There are currently 175 stations and 164 sub-stations. There is at least one STO at each station. At major stations, there could be 10 or more. From SLR annual reports, passenger traffic is growing by approx. 4% per annum. The PoS network will need to support the current infrastructure requirements as a minimum.	M M
33.3	Failure Management	When the SLR POS experiences the failure of one of its devices, two scenarios shall be possible: <ul style="list-style-type: none"> • Either it enters a fall-back mode that allows the continued usage of the POS. The minor failures that could allow such mode include payment terminals failures, printer out of service, etc. • Or the failure prevents the POS from carrying its main roles, which comprises not being able to print ticket, not having the fare policy, etc. In this case, it is set as out-of-service. 	M
33.4	Security	The SLR operators shall log into the application. Additionally, confidential data shall be stored securely in the station system.	M

vii. Validation and Inspection

Req No.	Requirement	Requirement Description	M or D
34	Overview	On-board vending and inspecting equipment are used by the inspectors to inspect fare products, selling and distributing tickets/vouchers or issuing a penalty fare. The equipment includes a hand-held terminal, a belt-held printer and a coin dispenser belt. This equipment will also be used as light POS to allow ticket distribution at stations not equipped with point of sales.	M M M
35	Functional Requirements		M
35.1	Shift Management	Before starting his/her shift, the on-board agent shall authenticate to the terminal. The on-board agent shall also be required to enter the train line in which he/she will be operating.	M M
35.2	Distribution	The equipment shall distribute the following local products: <ul style="list-style-type: none"> • Open ticket (valid on the day of purchase) • Non-exchangeable ticket voucher (train departure on the day of purchase) The tickets that have been issued shall be reported to the back-office.	M M

Req No.	Requirement	Requirement Description	M or D				
36.4	Security	Security mechanisms will be required for both the sale and the inspection process. Additionally, authentication and confidentiality mechanisms will be required to, respectively, authenticate the terminals to the back-office and to securely transfer the data to the back-office.	M				
		<ul style="list-style-type: none"> Inspection and ticket sale 					
		During inspection, the terminal shall verify a signature included in the bar-code data. A key, present in the terminal will verify this signature. This verification shall prove (1) that the ticket/voucher has been generated by the ticketing system (either by the online selling product server, by the mobile application server or by a handheld terminal) and (2) the integrity of the data.	M				
		When issuing a ticket, a similar signature mechanism shall be used to sign the ticket data. A key, located in the terminal, will be used to generate a signature using some ticket data. During inspection, this terminal and the other terminals will use a key to verify the signature.	M				
		The signature can be generated and verified using either public key and symmetrical key cryptography. Depending upon the system issuing the ticket different operation may be considered. The following table gives the cryptographic scheme that should/shall be used as well as the keys that need to be installed into each terminal.	M				
		The following table gives the cryptographic schemes that should be used according to ticket type.	M				
		<p style="text-align: center;"><i>Table 1 – Cryptographic scheme according to ticket type</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #cccccc;">Ticket type</th> <th style="background-color: #cccccc;">cryptographic scheme</th> </tr> </thead> <tbody> <tr> <td>Home-printed ticket/voucher & Mobile ticket/voucher</td> <td>Public-key scheme (because private key can be securely stored in the back-office)</td> </tr> <tr> <td>Hand-held terminal thermal paper ticket/voucher</td> <td>Public-key or Symmetrical scheme (as per the ticketing system supplier's choice)</td> </tr> </tbody> </table>	Ticket type	cryptographic scheme	Home-printed ticket/voucher & Mobile ticket/voucher	Public-key scheme (because private key can be securely stored in the back-office)	Hand-held terminal thermal paper ticket/voucher
Ticket type	cryptographic scheme						
Home-printed ticket/voucher & Mobile ticket/voucher	Public-key scheme (because private key can be securely stored in the back-office)						
Hand-held terminal thermal paper ticket/voucher	Public-key or Symmetrical scheme (as per the ticketing system supplier's choice)						
<ul style="list-style-type: none"> Authentication and confidentiality 							
The terminal will require authenticating to the back-office server.	M						
Additionally, a confidentiality mechanism shall secure the traffic between these two systems. For this, different mechanism may be implemented. Namely, HTTPS with log-in/password, HTTPS in mutual authentication mode (this would require keys to be installed in the terminal) or applicative security protocols.	M						

viii. Ticket Vending Machines

Req No.	Requirement	Requirement Description	M or D
37	Functional Requirements		

Req No.	Requirement	Requirement Description	M or D
37.1	Distribution	<p>The customer will be able to purchase the same products from TVM network as from a third party retailer.</p> <p>Through this channel, the customers will be able to purchase tickets and top up the SLR transport card.</p> <p>Sale of single and one day tickets All the single and one day tickets will be available for sales through the TVM equipment. These tickets are the following:</p> <ul style="list-style-type: none"> • Single / Return ticket (Commuter and Long Distance) <p>Sale of weekly and season tickets It will not be possible to purchase weekly, season and concession tickets from the TVM network. This will only be possible from a SLR PoS location. However, it will be possible to renew these period products, or add value to PAYG products using the TVM Network.</p>	M M M
37.2	Payment	<p>Both credit/debit card and cash payments shall be supported by TVMs</p> <p>The transaction's details shall be reported to the ticketing back-office system.</p>	M M
37.3	Reporting	<p>The TVM shall report its activity to the back-office. These reports include the following:</p> <ul style="list-style-type: none"> • The ticket types and quantities that have been issued. • The maintenance details, this includes: <ul style="list-style-type: none"> ○ The dates and times the front of the machine was opened. ○ The date and time the cash-box was removed • Payment transactions that have been performed. <p>As much as possible information collected by the TVM shall be reported to the back-office.</p> <p>This data will be stored into the ticketing system data-base, so that they can later be used to generate usage reports.</p>	M M M
37.4	Equipment Monitoring	<p>A monitoring mechanism shall be set up so that the ticketing back-office system is aware of the TVM states. It shall be informed that one on-board equipment is out-of-service or if one equipment has entered a fall-back mode. In the same way, the back-office shall be informed that a terminal is properly operating.</p>	M
38	Non-Functional Requirements		
38.1	Scalability	<p>It is proposed to have TVMs in multiple location including stations and off station locations (that will be advised to the Supplier by the Purchaser during the early stages of the implementation project).</p> <p>Bidders should assume for 30 TVMs at stations and 20 TVMs at locations other than stations.</p> <p>The TVM network may be extended over time to support the potential growth of passenger traffic.</p>	M M

Req No.	Requirement	Requirement Description	M or D
38.2	Failure Management	When the TVM experiences a failure which prevents the TVM from carrying its main roles, which comprises not being able to print ticket, etc. In this case, it is set as out-of-service.	M
		The information on the TVM terminal shall be held securely and capable of being downloaded at a later date.	M
		Report that it is out of service to the Central System	
38.3	Security	The TVM shall be provided with a level of security that meets standards for cash handling and also secure credit/debit card payment.	M

ix. Parcel and Luggage Tracking

Req No.	Requirement	Requirement Description	M or D
39	Funcional Requirements		
39.1	Overview	When a parcel or item of luggage is accepted by the system the following information will be recorded as a minimum:	M
		<ul style="list-style-type: none"> • Date and time • Location of receipt of parcel / luggage • Staff id receiving parcel / luggage • Weight of luggage / parcel • Destination • Charge (1st class, 2nd Class etc) • Parcel /luggage ID number • Name of sender • Name of person receiving parcel / luggage • Required delivery time • Supplement e.g. for faster delivery • Train parcel / luggage will be transported on (route no, car location etc) • Intermediate points on the journey, e.g. storage facilities, vehicle ID, etc) • Location parcel / luggage delivered to • Delivery time of parcel / luggage • Details of person receiving parcel / luggage 	
		Other data information may be necessary to be collected and stored to enable the process to operate efficiently. This will be agreed with the system provider during the detailed design stage.	M
		The system shall allow the parcel / luggage to be tracked on-line via a web portal so the customer can check progress of the parcel / luggage.	M
39.2	Equipment	The equipment shall comprise: Computer and display, printer for printing of bar code labels, scanner to scan bar-code from label	
39.3	Payment	Both credit/debit card and cash payments shall be supported by TVMs	M

Req No.	Requirement	Requirement Description	M or D
		The transaction's details shall be reported to the ticketing back-office system.	
39.4	Reporting	As much as possible information collected by the Parcel Tracking system shall be reported to the back-office. This data will be stored into the central system data-base, so that they can later be used to generate usage reports.	M M
40	Non-Functional Requirements		
40.1	Scalability	The parcel tracking equipment will be provided in major stations where the service is currently available. Bidders should assume for 10 sets of equipment This network may be extended over time to support the potential growth of parcel traffic.	M M
40.2	Security	The parcel tracking system shall be provided with a level of security that meets standards for cash handling and secure credit/debit card payment.	M

x. Gates & Validators

Req No.	Requirement	Requirement Description	M or D
41	Overview	Passenger Gates and Station Validators will be used for the inspection of tickets including bar code and smart card to confirm a passengers entitlement to enter the station area. The Passenger Gates and Validators will also be used to allow passengers to exit the station area The gates and validators will collect information from the ticket presented by the passenger and send this along with location and date and time information to the back office. The gate / validator will also indicate if the transaction was an entry or exit activity. The gates will be constructed such that they are capable of normal operation in the current climatic conditions experienced in Sri Lanka.	M M M M
42	Functional Requirements		
42.1	Standards	The gates and validators shall comply to the relevant set of standards for smart cards and bar code described in section 4.1	M
42.2		The equipment shall distribute the following local products: <ul style="list-style-type: none"> Open ticket (valid on the day of purchase) Non-exchangeable ticket voucher (train departure on the day of purchase) The tickets that have been issued shall be reported to the back-office.	M M

Req No.	Requirement	Requirement Description	M or D
		The hand-held terminal shall allow the distribution of on-board tickets easily; the minimal steps shall be required by the inspector to distribute a ticket to a customer that has just boarded the train. For instance, the hand-held terminal may require the inspector to enter the route on which he/she is operating at the beginning of his/her shift.	M
42.3	Validation on entry and exit	<p>Validating tickets will be the main roles of the fare gates and validators. The validation process shall be carried out by the fare gates and validators in an autonomously way.</p> <p>The validation process is as follows:</p> <ol style="list-style-type: none"> 1. The faregate / validator reads the bar-code / smart card and confirms the ticket is valid for travel on the date and time it is presented. 2. The faregate / validator checks the signature to prove the validity of the ticket's issuer and the ticket's integrity. 3. If all the above criteria are met then the fare gate is opened and the passenger can enter the station. In the case of a validator, an audible sound shall be emitted and a positive indication provided on the validator screen 4. If all the above criteria are not met then the fare gate will not open. An audible alarm will sound. In the case of a validator, an audible tone, different from the positive tone, will sound and a negative indication be provided. <p>The terminal shall detect ticket double-use fraud. For this, each terminal located in the same train, shall be informed of the tickets that have been inspected by the other terminals. In such way that a ticket inspected twice would be detected by fare gates validators.</p>	M M M
42.4	Performance	<p>A validator shall perform a transaction with a smart card or bar code in less than 500mSec</p> <p>A fare gate shall allow a minimum of 40 people per minute to pass through</p>	M M,
42.5	Equipment Monitoring	A monitoring mechanism shall be set up so that the ticketing back-office system is aware of the fare gates and validators states. It shall be informed when a fare gate or validator is out-of-service or if any item of equipment has entered a fall-back mode.	M
43	Non-Functional Requirements		
43.1	Physical Description of the Equipment - Faregates	<p>The fare gate shall include as a minimum, the following features:</p> <ul style="list-style-type: none"> • A bi-parting leaf, panel or similar to facilitate high speed throughput for passengers entering or leaving the station • It shall be possible to configure the gates to operate in either entry or exit mode • The construction of the fare gates shall be such that they are capable of operation in the climate experienced in Sri Lanka • Each fare gate shall be fitted with a smart card reader and a bar code reader in compliance with the standards in section 4.1 • An interface shall be provided to allow the passenger to see if a transaction has been validated or not • Audible tones shall be used to identify valid and non-valid transactions to the customer • Fare gates may be connected to create a gateline. It will be possible to control the opening of all the gates in a gateline from one location • In the event of an emergency and the need to evacuate the station it will be possible to open all the gates in a station from one location 	

Req No.	Requirement	Requirement Description	M or D
	Physical Description of the Equipment – Platform Validators	Platform Validators (PV) shall be compact, ergonomically designed, simple to use, and sufficiently robust to withstand the operational environment encountered in unsheltered locations and to deter acts of vandalism.	M
		Platform Validators shall <ul style="list-style-type: none"> • Be able to be programmed such that they know the station and fare zone in which they are located; ^{[[]]}_{ISEP} • Be able to provide bar code / smart card validity information to the passenger. • 	M
		The PV shall be modularly upgradeable so that it does not need to be replaced in its entirety to increase memory capacity, to upgrade processing performance, to provide for additional Smart Media functionality or to maintain compatibility with ISO/IEC-14443 standards as they develop. ^{[[]]} _{ISEP}	M
		The Contractor shall provide a complete description of the functionality of the PVs in the tender response .	M
43.3	Scalability	There will initially only be a small number of gates and validators installed. Bidders are asked to provide unit costs.	M

5.3 Operational Requirements

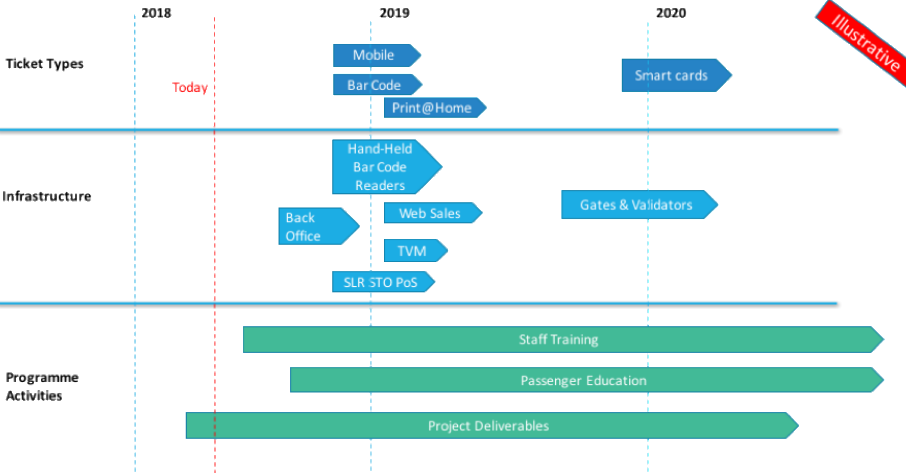
There is a minimum level of operational requirements that the system will need to meet these are in relation to volumetric and availability requirements

Req. No	Requirement Summary	Operational Requirement Description			M or D
44.1	Ticket sales	The system shall be capable of selling at least 1 million tickets per day at peak time and 200 million tickets per annum. The system shall be scalable to increase this figure annually. Currently the increase is 4% per annum			M
44.2	System enquiries	The system will be in operation from 24 hours daily Calls shall be answered within 45 seconds			M M
44.3	Availability & Reliability	The overall system availability shall be 99.98%(This will be taken for the price evaluation) Bidders shall describe how their system will be designed to meet this requirement			M M
	KPIs	The following KPIs will apply to the RTRS system to be implemented			M
44.4	Requirements	Metrics	Output	KPI	M
		Operational	<ul style="list-style-type: none"> • Customer numbers by route • Route miles covered • Customer numbers validating • Complaints • Availability of system statistics • Tracking of assets • Average downtime of the back-office system and the equipment • Delay for the operations team to detect issues 	<ul style="list-style-type: none"> • Reports on above by 8am following day • Availability against targets • Actual time to fix versus targets • Monthly Service Report available by day 5 of new month • Monthly reporting on Assets location and condition by day 	

Req. No	Requirement Summary	Operational Requirement Description			M or D
			<ul style="list-style-type: none"> Delay for the maintenance team to fix issues 	<ul style="list-style-type: none"> Monthly reporting of incidents including start time, detection time, fix time Availability of the back office (in %) Availability of the equipment (in %) 	
		Quality of service	<ul style="list-style-type: none"> Availability of devices against targets Ticket Medium Failure Rates Availability/utilisation of Back Office System Fraud Monitoring Monthly Service Report on the System Tracking of assets Health and Safety Reports 	<ul style="list-style-type: none"> Daily outages and Failure Reporting Time to fix reporting on whether targets are met Monthly reports on availability of assets and back office systems Reports on fraudulent activity and action taken Monthly reports on assets and their location 	
		Financial	<ul style="list-style-type: none"> Daily/weekly/monthly/annual revenue reports Revenue by route Revenue reports from agents and settlement of amounts due 	<ul style="list-style-type: none"> Daily reports by 8am following morning Weekly reports by 8am Monday following Monthly settlement report with Operators/Agents by day 5 of new period 	

5.4 Implementation Requirements

Req. No	Requirement Summary	Implementation Requirement Description	M or D
1.	Acceptance	The Contractor shall provide functional test procedures that satisfactorily demonstrate all equipment functions according to these specifications and that all performance requirements will be met.	M
		The purpose of this test shall be to demonstrate correct operation for each type of equipment including all the functions specified throughout the specifications document, and all limiting conditions.	M
		An item of each type of equipment shall be required to successfully execute all hardware and software functions as defined and identified in the specifications, and any further definitions or clarifications made during the ensuing design process.	M
2.	Acceptance Testing	The system will be tested in situ to determine that all the performance and operational criteria will be met once the system goes live.	M M

Req. No	Requirement Summary	Implementation Requirement Description	M or D
3.	Implementation Schedule	<p>The implementation shall be completed in three stages over 36 months</p> <p>The Schedule will be as follows:</p> <p>Phase 1 – approx. 18 months</p> <ul style="list-style-type: none"> • Implement Back Office • Update ale STO's to bar code ticketing • implement Mobile Ticketing • Implement Hand-Held Bar code readers for validation at stations / on-board <p>Phase 2 – approx. 8 months</p> <ul style="list-style-type: none"> • Implement Print@Home for Web sales • Install TVMs at stations and off-station <p>Phase 3 – approx. 10 months</p> <ul style="list-style-type: none"> • Install gates and validators to read bar-codes / smart cards • Implement Smart cards and PAYG <p>The chart below shows the phasing of the project.</p> 	M
4.	Implementation Services	<p>The Bidder shall provide an appropriate number of staff, including a project manager, of adequate skill and experience for the implementation of equipment and associated software.</p> <p>The Bidder shall provide resumes of proposed staff demonstrating skill and experience in deploying the equipment/software.</p>	M M
5.	Migration	<p>The Bidder is required to assist SLR in the migration from the current system to the new RTRS system. The bidder shall outline how this will be delivered</p>	M

Req. No	Requirement Summary	Implementation Requirement Description	M or D
6.	Documentation	<p>The contractor will provide the following deliverables as a minimum. The outline delivery plan provided by the bidder will identify when each of these documents will be delivered.</p> <ul style="list-style-type: none"> • Quality Plan • Project Plan • Personnel Security Plan • System General Specification • System Architecture Specification • Functional Specification of Validation Equipment • Detailed Technical Specification of Validation Equipment (including gates & platform validators) • Embedded Software Specification for Validation Equipment (including gates & platform validators) • Test plan for Validation Equipment factory acceptance • Functional Specification of Inspection Equipment • Detailed Technical Specification of Inspection Equipment • Embedded Software Specification for Inspection Equipment • Test plan for Inspection Equipment Pre-commissioning • Functional Specification of Smartcard • Detailed Technical Specification of Smartcard • Test plan for Smartcard Pre-commissioning • Functional Specification of Paper Ticket • Detailed Technical Specification of Paper Ticket • Test plan for Paper Ticket Pre-commissioning • Functional Specification of Internet Website • Detailed Technical Specification of Internet Website • Test plan for Internet Website Pre-commissioning • Functional Specification of Mobile Application • Detailed Technical Specification of Mobile Application • Test plan for Mobile Application Pre-commissioning • Functional Specification of POS Equipment • Detailed Technical Specification of POS Equipment • Embedded Software Specification for POS Equipment • Test plan for POS Equipment Pre-commissioning • Functional Specification of Ticket Vending Machine • Detailed Technical Specification of Ticket Vending Machine • Embedded Software Specification for Ticket Vending Machine • Test plan for Ticket Vending Machines Pre-commissioning • Functional Specification of Third Party Retailers Equipment • Detailed Technical Specification of Third Party Retailers Equipment • Embedded Software Specification for Third Party Retailers Equipment • Test plan for Third Party Retailers Pre-commissioning • Functional Specification of Back-office system • Detailed Technical Specification of Back-office system • Test plan for Back-office System Pre-commissioning • Pre-operational acceptance test plan • Installation Requirements for Gates & Validators • Installation Requirements for Ticket Vending Machines • Training Plan • Training Material • User guides • Transition plan 	<p>M</p> <p>M</p>

5.5 Training Requirements

Req. No	Requirement Summary	Training Requirement Description	M or D
1.	Audience	a) SLR Management and non-user personnel chosen by SLR (80 personals) b) One Hundred SLR trainers	M M
2.	Training Concept	The Bidder to provide a Training Concept document to clarify the need of the training for SLR personnel. The training should be given by the supplier of the equipment The Bidder shall plan the training covering the actual equipment, the network providing the services and by experienced trainers. The Bidder shall provide sufficient sets of RTRS equipment (including all types of sales channels, all types of station and portable equipment, all passenger media) to the SLR Training Centre to be utilized during the training and SLR to use them (after train to trainer course). The builder shall work with SLR training centre to develop a schedule to train all SLR station staff while the new system go live. Foreign Training for SLR Management and non-user personnel. The Bidder shall include, in his offer, all the costs of training.	M M M M M M M
3.	Objectives	The Bidder shall meet the following objectives: a) Objectives of the training should achieve b) Participants will be able to perform: an effective and safe operation, of the new RTRS system because of the training	M
4.	Content	The Bidder shall provide a summary of the key competencies that training will cover.	M
5.	Delivery	The Bidder shall include in the Training Plan about how shall the training be delivered (e.g. local training courses, foreign training courses, train the trainer, etc.)	M
6.	Documentation	The Bidder shall provide the following documentation a) User Manuals of all the equipment provided; b) General description of RTRS system documentation; c) All training material will become the property of the SLR.	M

5.6 Project Management Requirements

Req. No	Requirement Summary	Project Management Requirement Description	M or D
1	Governance	The Bidder shall describe the preferred governance arrangements for a successful delivery.	M

Req. No	Requirement Summary	Project Management Requirement Description	M or D
2	Preliminary Project Plan	The Bidder shall provide a Preliminary Project Plan; to include as appropriate, but not be limited to the following issues: a) Project Objectives b) Project Management and Staffing Plan; c) Implementation Schedule showing the phases, milestones and key tasks that will meet the stated time frame for the project. d) Key Task, Time, and Resource Schedule e) Technical and/or Operational Support Plans f) Training Plan g) Risk Management Plan h) Pre/post Commissioning/Operational Acceptance Testing Plan (if applicable)	M
3	Quality Assurance	The Bidder shall show proof of quality assurance across both the organizational and project levels, ISO 9001-2000 and/or Capability Maturity Model (CMM) certification. Include the proposed plan for quality management.	M M

5.7 Maintenance Support / Service Level Requirements

The Bidder shall submit a draft of Maintenance Plan as part of their technical proposal.

The Bidder shall present a priced offer (price per year) for the maintenance and performance management of the proposed RTRS system.

Req. No	Requirement Summary	Maintenance Support / Service Level Requirement Description	M or D
1.	Performance KPIs	System operation related fees will be conditional on the achievement of objectives related to system operations performance KPIs. For each metric, a primary objective is assigned. Achieving the primary objective is a mandatory condition for the full operations fee to be paid to the Supplier.	M M

<p>2.</p>		<p>Should a primary objective not be reached, a secondary objective that allows getting a partial payment is defined as follows:</p>	<p>M</p>																																																		
		<table border="1"> <thead> <tr> <th>Indicator group</th> <th>Indicator</th> <th>Metric</th> <th>Primary objective</th> <th>Secondary objective</th> </tr> </thead> <tbody> <tr> <td rowspan="3"> <p>A</p> </td> <td> <p>1. Availability of daily operational reports</p> </td> <td> <p>Date and time of delivery</p> </td> <td> <p>All reports delivered by 5am following day</p> </td> <td> <p>Only 3 instances when reports were delivered later than 5am following day</p> </td> </tr> <tr> <td> <p>2. Availability of monthly operational reports</p> </td> <td> <p>Date and time of delivery</p> </td> <td> <p>Day 5 of following month</p> </td> <td> <p>Day 7 of following month</p> </td> </tr> <tr> <td> <p>3. Availability of monthly financial reports</p> </td> <td> <p>Date and time of delivery</p> </td> <td> <p>Day 5 of following month</p> </td> <td> <p>Day 7 of following month</p> </td> </tr> <tr> <td rowspan="3"> <p>B</p> </td> <td rowspan="3"> <p>Downtime of the back-office system</p> </td> <td> <p>1. Downtime duration during peak hours</p> </td> <td> <p>No more than 0.15 peak hours per month</p> </td> <td> <p>No more than 0.25 peak hours per month</p> </td> </tr> <tr> <td> <p>2. Downtime duration during regular hours</p> </td> <td> <p>No more than 0.5 regular hour per month</p> </td> <td> <p>No more than 1.0 regular hour per month</p> </td> </tr> <tr> <td> <p>3. Downtime duration during night hours</p> </td> <td> <p>No more than 5 night hour per month</p> </td> <td> <p>No more than 10 night hour per month</p> </td> </tr> <tr> <td rowspan="3"> <p>C</p> </td> <td rowspan="3"> <p>Downtime of the website</p> </td> <td> <p>1. Downtime duration during peak hours</p> </td> <td> <p>No more than 5 peak hours per month</p> </td> <td> <p>No more than 7.5 peak hours per month</p> </td> </tr> <tr> <td> <p>2. Downtime duration during regular hours</p> </td> <td> <p>No more than 5 regular hour per month</p> </td> <td> <p>No more than 7.5 regular hour per month</p> </td> </tr> <tr> <td> <p>3. Downtime duration during night hours</p> </td> <td> <p>No more than 10 night hour per month</p> </td> <td> <p>No more than 15 night hour per month</p> </td> </tr> <tr> <td rowspan="3"> <p>D</p> </td> <td rowspan="3"> <p>Downtime of the mobile application</p> </td> <td> <p>1. Downtime duration during peak hours</p> </td> <td> <p>No more than 0.15 peak hours per month</p> </td> <td> <p>No more than 0.25 peak hours per month</p> </td> </tr> <tr> <td> <p>2. Downtime duration during regular hours</p> </td> <td> <p>No more than 0.5 regular hour per month</p> </td> <td> <p>No more than 1.0 regular hour per month</p> </td> </tr> <tr> <td> <p>3. Downtime duration during night hours</p> </td> <td> <p>No more than 5 night hour per month</p> </td> <td> <p>No more than 10 night hour per month</p> </td> </tr> </tbody> </table>	Indicator group	Indicator	Metric	Primary objective	Secondary objective	<p>A</p>	<p>1. Availability of daily operational reports</p>	<p>Date and time of delivery</p>	<p>All reports delivered by 5am following day</p>	<p>Only 3 instances when reports were delivered later than 5am following day</p>	<p>2. Availability of monthly operational reports</p>	<p>Date and time of delivery</p>	<p>Day 5 of following month</p>	<p>Day 7 of following month</p>	<p>3. Availability of monthly financial reports</p>	<p>Date and time of delivery</p>	<p>Day 5 of following month</p>	<p>Day 7 of following month</p>	<p>B</p>	<p>Downtime of the back-office system</p>	<p>1. Downtime duration during peak hours</p>	<p>No more than 0.15 peak hours per month</p>	<p>No more than 0.25 peak hours per month</p>	<p>2. Downtime duration during regular hours</p>	<p>No more than 0.5 regular hour per month</p>	<p>No more than 1.0 regular hour per month</p>	<p>3. Downtime duration during night hours</p>	<p>No more than 5 night hour per month</p>	<p>No more than 10 night hour per month</p>	<p>C</p>	<p>Downtime of the website</p>	<p>1. Downtime duration during peak hours</p>	<p>No more than 5 peak hours per month</p>	<p>No more than 7.5 peak hours per month</p>	<p>2. Downtime duration during regular hours</p>	<p>No more than 5 regular hour per month</p>	<p>No more than 7.5 regular hour per month</p>	<p>3. Downtime duration during night hours</p>	<p>No more than 10 night hour per month</p>	<p>No more than 15 night hour per month</p>	<p>D</p>	<p>Downtime of the mobile application</p>	<p>1. Downtime duration during peak hours</p>	<p>No more than 0.15 peak hours per month</p>	<p>No more than 0.25 peak hours per month</p>	<p>2. Downtime duration during regular hours</p>	<p>No more than 0.5 regular hour per month</p>	<p>No more than 1.0 regular hour per month</p>	<p>3. Downtime duration during night hours</p>	<p>No more than 5 night hour per month</p>	<p>No more than 10 night hour per month</p>
Indicator group	Indicator	Metric	Primary objective	Secondary objective																																																	
<p>A</p>	<p>1. Availability of daily operational reports</p>	<p>Date and time of delivery</p>	<p>All reports delivered by 5am following day</p>	<p>Only 3 instances when reports were delivered later than 5am following day</p>																																																	
	<p>2. Availability of monthly operational reports</p>	<p>Date and time of delivery</p>	<p>Day 5 of following month</p>	<p>Day 7 of following month</p>																																																	
	<p>3. Availability of monthly financial reports</p>	<p>Date and time of delivery</p>	<p>Day 5 of following month</p>	<p>Day 7 of following month</p>																																																	
<p>B</p>	<p>Downtime of the back-office system</p>	<p>1. Downtime duration during peak hours</p>	<p>No more than 0.15 peak hours per month</p>	<p>No more than 0.25 peak hours per month</p>																																																	
		<p>2. Downtime duration during regular hours</p>	<p>No more than 0.5 regular hour per month</p>	<p>No more than 1.0 regular hour per month</p>																																																	
		<p>3. Downtime duration during night hours</p>	<p>No more than 5 night hour per month</p>	<p>No more than 10 night hour per month</p>																																																	
<p>C</p>	<p>Downtime of the website</p>	<p>1. Downtime duration during peak hours</p>	<p>No more than 5 peak hours per month</p>	<p>No more than 7.5 peak hours per month</p>																																																	
		<p>2. Downtime duration during regular hours</p>	<p>No more than 5 regular hour per month</p>	<p>No more than 7.5 regular hour per month</p>																																																	
		<p>3. Downtime duration during night hours</p>	<p>No more than 10 night hour per month</p>	<p>No more than 15 night hour per month</p>																																																	
<p>D</p>	<p>Downtime of the mobile application</p>	<p>1. Downtime duration during peak hours</p>	<p>No more than 0.15 peak hours per month</p>	<p>No more than 0.25 peak hours per month</p>																																																	
		<p>2. Downtime duration during regular hours</p>	<p>No more than 0.5 regular hour per month</p>	<p>No more than 1.0 regular hour per month</p>																																																	
		<p>3. Downtime duration during night hours</p>	<p>No more than 5 night hour per month</p>	<p>No more than 10 night hour per month</p>																																																	

Req. No	Requirement Summary	Maintenance Support / Service Level Requirement Description					M or D
		E	Downtime of each equipment	1. Average downtime duration during peak hours (over all equipment)	No more than 0.15 peak hours per month	No more than 0.25 peak hours per month	
				2. Average downtime duration during regular hours (over all equipment)	No more than 0.5 regular hour per month	No more than 1.0 regular hour per month	
				3. Individual downtime over peak and regular hours (any equipment)	No more than 10 hours of downtime over peak and regular hours for any individual equipment	No more than 20 hours of downtime over peak and regular hours for any individual equipment	
3.	Modifications upgrades and services	<p>A modification management process needs to be put in place which will incorporate communication with the various parties involved.</p> <p>To keep the RTRS system in operational condition, modifications may be required.</p> <p>The Bidder to provide modifications such as the following:</p> <ul style="list-style-type: none"> a) System optimization; b) Service extensions; c) New integrations; d) Software upgrades, including related hardware upgrades if needed; <p>Other works necessary.</p>					M M M
4.	Knowledge and Expertise	The Bidder shall provide the relevant number of staff, with appropriate skills and competency level across suitable locations to provide ongoing support for the services required.					M
5.	Performance Monitoring	<p>It is necessary to monitor the equipment within the RTRS system from end to end to monitor the services supported performance measurements, analysis reports.</p> <p>The Bidder shall describe their internal fault reporting, fault escalation and feature request processes. This description should include but not limited to:</p> <ul style="list-style-type: none"> a) Fault resolution; b) Fault escalation; c) Feature requests; <p>Requested or Identified Feature development.</p>					M M

6 Attachments

6.1 Draft Software Licence Agreement Requirements

Guide to completing the Agreement Matrix

Instructions		Explanation
1. Accepted: Yes _____ No _____ Proposed Change: Reason for Proposed Change:		By indicating “Yes” the Bidder agrees to inclusion of this clause in the subsequent Contract. By indicating “No” Bidder does not agree to incorporating this clause. By indicating “Yes/Proposed Change” Bidder agrees to incorporate the clause with the noted text revision. Bidder must also give reason for requesting revision to text.
2. Mandatory: Confirm Acceptance Yes _____ No _____ Proposed Change: Reason for Proposed Change:		If a clause is identified as “Mandatory” it MUST be included in the Contract and its intended purpose is to be maintained. Refusing to accept a “Mandatory” clause may result in Bidder’s disqualification. Bidder may check “Yes” to accept a Mandatory clause, and also propose a change to that clause, however, the Employer is not obligated to accept the proposed change and the Bidder is obligated to proceed with the accepted Mandatory clause. Bidder must also give reason for requesting revision for text.
3. Non-Negotiable Confirm Acceptance Yes _____ No _____		This indicates that the clause must be accepted “AS-IS”. No revision to text will be considered. A Bidder’s refusal to accept a “Non-Negotiable” clause “AS-IS” may result in Bidder’s disqualification.

NOTE: Bidder’s failure to accept the Mandatory clauses and/or Non-Negotiable clauses, and to request clauses otherwise not indicated in its original submission during the contract finalization process may result in disqualification.

INSTRUCTION: The Bidder must provide their proposed license agreement in hardcopy and in an electronic Word file with their submission for review and approval by the Employer. Should the offered license agreement be acceptable to the Employer, it is the intention of the Employer to use the offered license.

The provisions offered below are areas that must be addressed in the offered license. As noted above, if the areas are addressed in the offered contract, it is the desire of the Employer to use the license agreement offered. If the area is not covered by the offered license agreement, the Employer must have the offered license amended to address the topic.

Unless specifically noted, the language below is mandatory, but if deemed necessary, Bidder may present proposed wording changes for Employer consideration.

Item	Description	Bidder’s Response
1.	ASSIGNMENT Employer shall seek approval prior to assigning contractual obligations and rights. In some cases Employer may not be able to consent to assignment. e.g. Violation of Bank debarment policy or if Assignee is identified on any terrorist sanctions list, the United States Executive Order 13224 sanctions list and the United Kingdom terrorist sanctions list. In such cases Employer shall seek to retain license rights to and use of any perpetual software	Mandatory Confirm Acceptance: Yes___/No____. Proposed Changes: Reason for Proposed

Item	Description	Bidder's Response
	license.	Change:
2.	<p align="center">CHANGES AND MODIFICATIONS</p> <p>Any contract should allow for both parties to agree to modify the contract</p>	<p>Mandatory</p> <p>Confirm Acceptance: Yes___/No___.</p> <p>Proposed Changes: Reason for Proposed Change:</p>
3.	<p align="center">CONFIDENTIALITY</p> <p>Contractor must provide Employer with Confidentiality coverage to the same degree as requested by Contractor.</p>	<p>Mandatory</p> <p>Confirm Acceptance: Yes___/No___.</p> <p>Proposed Changes: Reason for Proposed Change:</p>
4.	<p align="center">CONSEQUENTIAL DAMAGES</p> <p>Employer will not be responsible to Contractor for consequential damages. If in the normal use of the product, Employer information is shared with the Contractor additional language will be needed.</p>	<p>Mandatory</p> <p>Confirm Acceptance: Yes___/No___.</p> <p>Proposed Changes: Reason for Proposed Change:</p>
5.	<p align="center">DISASTER RECOVERY</p> <p>For disaster recovery purposes, Employer may make one copy of the Software and use such copy on a Central Processing Unit (CPU) or server other than the designated one or at an installation site other than that for which the Software is licensed, such other installation site to be owned or controlled by the Employer or the Employer's disaster recovery vendor.</p> <p>Such copy shall be used only for the Employer's procedures and effectiveness subsequent to the occurrence of an actual disaster during which the Employer cannot operate the Software on the designated equipment or at the installation site for which the Software is licensed.</p>	<p>Mandatory</p> <p>Confirm Acceptance: Yes___/No___.</p> <p>Proposed Changes: Reason for Proposed Change:</p>
6.	<p align="center">GRANT OF LICENSE</p> <p>Contractor shall be specific on the type of license offered. Employer may seek the right to develop derivative works for internal use only. Nothing in the License shall preclude Employer from developing training materials and other items for use by the Employer in its usual operations.</p>	<p>Mandatory</p> <p>Confirm Acceptance: Yes___/No___.</p> <p>Proposed Changes: Reason for Proposed Change:</p>
7.	<p align="center">TERM OF LICENSE</p> <p>As specified in RFP.</p>	<p>Mandatory</p> <p>Confirm Acceptance: Yes___/No___.</p> <p>Proposed Changes: Reason for Proposed Change:</p>
8.	<p align="center">INDEMNIFICATION</p> <p>Contractor agrees to indemnify and hold harmless Employer, its officers, employees and agents against all claims, suits and losses, including reasonable attorneys' fees, for any</p>	<p>Mandatory</p> <p>Confirm Acceptance:</p>

Item	Description	Bidder's Response
	<p>claim or action brought against Employer based on a claim that the use of the Licensed Software in accordance with this Contract infringes any patent, trademark, copyright or any intellectual property rights of a third party in the country where it was sold, provided that Employer: (i) notifies Contractor promptly in writing of any claim; (ii) cooperates with Contractor to defend or settle the claim; and (iii) permits Contractor to control the defence, compromise, or settlement of the claim.</p> <p>If the Licensed Software or any portion thereof infringes the rights of a third party, Contractor will either: (a) procure at no cost to Employer the right to continue to use the Licensed Software in accordance with this Contract; (b) replace or modify the Licensed Software to avoid the infringement on an exchange basis provided that the replacement or modified License Software may be used in substantially the same manner by Employer; or (c) terminate this Contract and refund the license fees paid by Employer for the use of the Licensed Software based on straight line depreciation over a five (5) year period and pay Employer liquidated damages of \$25,000. (can alter \$ amount based on requirement value)</p>	<p>Yes___/No___.</p> <p>Proposed Changes:</p> <p>Reason for Proposed Change::</p>
9.	<p>EMPLOYER NAME/LOGO</p> <p>Contractor may use Employer's name only (not its logo or any discussion of the work performed under this Contract) in its customer lists without prior approval of Employer. Any other use of the Employer's name and/or logo must be approved by written permission from [position title]</p>	<p>Mandatory</p> <p>Confirm Acceptance:</p> <p>Yes___/No___.</p> <p>Proposed Changes:</p> <p>Reason for Proposed Change:</p>
10.	<p>PRESERVATION OF IMMUNITIES AND DISPUTE RESOLUTION</p> <p>NOTE: THIS LANGUAGE MUST BE INSERTED UNCHANGED</p> <p>Notwithstanding any other provision of this Contract, it is understood that neither this Contract nor the arbitration of a dispute arising under or in connection with this Contract shall constitute or be considered to be a limitation upon or a waiver of the privileges and immunities of the members of ADB including immunity from taxation.</p> <p>Any disputes arising in connection with this Contract shall be settled by the mutual agreement of the parties, provided that failing such agreement; the dispute shall be finally settled by arbitration in accordance with the procedures set out in General Conditions Clause 52 then in effect, subject to the privileges and immunities of the Bank members which are specifically reserved. The parties agree to implement any requirements of the arbitrator(s) directed to them in accordance with those rules.</p> <p>For more information about Bank privileges and immunities please go to:[insert website]</p>	<p>Non-Negotiable</p> <p>Confirm Acceptance:</p> <p>Yes___/No___.</p>
11.	<p>TERMINATION</p> <p>Contract must have provision that allows Employer to terminate on reasonable notice and terms.</p>	<p>Mandatory</p> <p>Confirm Acceptance:</p> <p>Yes___/No___.</p> <p>Proposed Changes:</p> <p>Reason for Proposed Change:</p>
12.	<p>WARRANTY</p> <p>Contract must have provision.</p>	<p>Mandatory</p> <p>Confirm Acceptance:</p> <p>Yes___/No___.</p> <p>Proposed Changes:</p> <p>Reason for Proposed Change:</p>
14.	<p>AUTHORIZED OFFICER</p> <p>Bank will designate an authorized representative to make changes to the contract.</p>	<p>Mandatory</p> <p>Confirm Acceptance:</p>

Item	Description	Bidder's Response
		Yes___/No___. Proposed Changes: Reason for Proposed Change:
15.	<p>ANTI-TERRORISM</p> <p>Similar language to that provided below shall also be included in the Contract.</p> <p>Contractor and all Sub Contractor shall use reasonable efforts to ensure that funds paid to Contractor or Sub Contractor (s) by the Employer are not used to finance, support or conduct terrorism.</p>	<p>Mandatory</p> <p>Confirm Acceptance: Yes___/No___. Proposed Changes: Reason for Proposed Change:</p>
16.	<p>INVOICING</p> <p>Employer will provide specifics on invoicing instructions.</p>	<p>Mandatory</p> <p>Confirm Acceptance: Yes___/No___. Proposed Changes: Reason for Proposed Change:</p>
17.	<p>NOTICES</p> <p>Contract must designate the form of official notices.</p>	<p>Mandatory</p> <p>Confirm Acceptance: Yes___/No___. Proposed Changes: Reason for Proposed Change:</p>
18.	<p>SOURCE CODE ESCROW</p> <p>Upon request by the Employer, the Contractor shall place a copy of the Escrow Material into escrow.</p>	<p>Mandatory</p> <p>Confirm Acceptance: Yes___/No___. Proposed Changes: Reason for Proposed Change:</p>
19.	<p>SOFTWARE UPDATES AND MAINTENANCE</p> <p>Contract must specify maintenance service and product update provisions.</p>	<p>Mandatory</p> <p>Confirm Acceptance: Yes___/No___. Proposed Changes: Reason for Proposed Change:</p>

Section VII. General Conditions (GC)

DO NOT COPY

Table of Clauses

1.	Definitions	4
2.	Contract Documents	9
3.	Interpretation	10
4.	Communications	11
5.	Law and Language	12
6.	Corrupt Practices	12
7.	Scope of Facilities	13
8.	Time for Commencement and Completion	13
9.	Contractor's Responsibilities	13
10.	Employer's Responsibilities	15
11.	Contract Price	16
12.	Terms of Payment	16
13.	Securities	17
14.	Taxes and Duties	18
15.	Intellectual Property and Copyright	19
16.	Software Services and License Agreements	20
17.	Confidential Information	21
18.	Representatives	22
19.	Project Planning and Performance	24
20.	Subcontracting	25
21.	Design and Engineering	25
22.	Transport and Delivery	28
23.	Product Upgrades	29
24.	IT Products and/or Services	30
25.	Inspection and Testing	30
26.	Completion	31
27.	Commissioning and Operational Acceptance	32
28.	Completion Time Guarantee	35
29.	Defect Liability	36
30.	Functional Guarantees	38
31.	Intellectual Property Rights Warranty	39
32.	Intellectual Property Rights Indemnity	39
33.	Limitation of Liability	41
34.	Criminal Charges and Convictions	41
35.	Transfer of Ownership	42

36.	Care of IT Products and/or Services	42
37.	Loss of or Damage to Property; Accident or Injury to Workers; Indemnification	43
38.	Insurance	45
39.	Unforeseen Conditions	47
40.	Change in Laws and Regulations	48
41.	Force Majeure	48
42.	War Risks	49
43.	Change in the Facilities	51
44.	Extension of Time for Completion	54
45.	Suspension	55
46.	Termination for Employer's Convenience	56
47.	Termination for Contractor's Default	57
48.	Termination by Contractor	59
49.	Assignment	61
50.	Export Restrictions	61
51.	Contractor's Claims	61
52.	Disputes and Arbitration	63

General Conditions

A. Contract and Interpretation

1. Definitions

1.1 The following words and expressions shall have the meanings hereby assigned to them:

"ADB" means the Asian Development Bank.

"Adjudicator" means the person named in Appendix 2 (Adjudicator) of the Contract, or otherwise appointed by agreement between the Employer and the Contractor to make a decision on or to settle any dispute or difference between the Employer and the Contractor referred to him or her by the parties, pursuant to GC Clause 52 (Disputes and Arbitration).

"Agreed and Finalized Project Plan" means the project plan that has been approved by the Employer in accordance with GC Clause 19 (Project Planning and Performance) and is included at Appendix 8 of the Contract.

"Arbitration" means the application of judicial methods to the settlement of disputes.

"Bank" means ADB defined in the PC.

"Bidding Documents" refers to the collection of documents issued by the Employer to instruct and inform potential Contractors of the processes for bidding, selection of the winning bid, and Contract information, as well as the contractual conditions governing the relationship between the Employer and the Contractor.

"Borrower" means the government of the Employer's Country and includes the Employer.

"Commissioning" means operation of the IT Products and/or Services or any part thereof by the Contractor following Completion, which operation is to be carried out by the Contractor as provided in GC Sub-Clause 27.1 (Commissioning) hereof, for the purpose of carrying out Operational Acceptance Test(s).

"Completion" means that the Facilities (or a specific part thereof where specific parts are specified in the Contract) have been completed operationally, that all work in respect of Pre-commissioning and Installation of the Facilities or such specific part thereof has been completed, that all Documentation has been supplied, and that the Facilities or specific part thereof are ready for Commissioning as provided in GC Clause 26 (Completion) hereof.

"Contract" means the contract entered into between the Employer and the Contractor, and constituted by the Contract Documents.

"Contract Documents" means the documents listed in Article 1.1 (Contract Documents) of the Contract (including any amendments thereto).

“Contract Period” is the time period during which this Contract governs the relations and obligations of the Employer and Contractor in relation to the IT Products and/or Services, as specified in the PC.

“Contract Price” means the sum specified in Article 2.1 (Contract Price) of the Contract, subject to such additions and adjustments thereto or deductions there from, as may be made pursuant to the Contract.

“Contractor” means the party named as the Contractor in the Contract, and includes the legal successors or permitted assigns of the Contractor.

“Contractor’s Country” is the country in which the Contractor is legally organized, as named in the Contract.

“Contractor’s Equipment” means all equipment, tools, apparatus, or things of every kind required in or for installation, completion and maintenance of the System that are to be provided by the Contractor, but excluding the IT Products and/or Services, or other items forming part of the System.

“Contractor’s Representative” means any person nominated by the Contractor and approved by the Employer in the manner provided in GC Clause 18 (Representatives) hereof to perform the duties delegated to the Contractor.

“Coverage Period” means the Days of the Week and the hours of those Days during which maintenance, operational and/or technical support services (if any) must be available.

“Custom Documentation” means Documentation identified as such in Appendix 5 of the Contract and such other Documentation as the parties may agree in writing to be Custom Documentation.

“Custom Software” means Software identified as such in Appendix 4 of the Contract and such other Software as the parties may agree in writing to be Custom Software.

“Day” means calendar day.

“Defect” means an imperfection or flaw that impairs worth or utility of the Product.

“Defect Liability Period” means the period of validity of the warranties given by the Contractor commencing at Commissioning of the Facilities or a part thereof, during which the Contractor is responsible for defects with respect to the Facilities (or the relevant part thereof) as provided in GC Clause 29 (Defect Liability) hereof.

“Delivery” means the transfer of the Products from the Contractor to the Employer in accordance with the current edition Incoterms specified in the Contract.

“Designated Operating Environment” means the particular hardware and software environment in which the Software is designed to be used, which environment is specified in the SOR.

“Documentation” means all documentation in printed or printable form and all instructional and informational aides in any form (including audio, video, and text) and on any medium, provided to the Employer under the Contract. See also Standard Documentation and Custom Documentation.

“Effective Date” means the date of fulfillment of all conditions specified in Article 3 (Effective Date) of the Contract, from which the Time for Completion shall be counted.

“Eligible Country” means the countries and territories eligible for participation in procurements financed by ADB as defined in the Procurement Guidelines.

“Employer” means the person named as such in the PC and includes the legal successors or permitted assigns of the Employer.

“Employer’s Country” means the country named in the PC.

“Facilities” means the Products to be supplied and installed, as well as all Installation Services to be carried out by the Contractor under the Contract.

“Functional Guarantees” means the guarantees specified in the Appendix to the Contract titled Functional Guarantees.

“GC” means the General Conditions.

“General-Purpose Software” means Software that supports general-purpose office and software development activities and is identified as such in Appendix 4 of the Contract and such other Software. Such General-Purpose Software may include, but is not restricted to, word processing, spreadsheet, generic database management, and application development software.

“Hardware” means all equipment, furnishings, and other tangible items outlined in the SOR that the Contractor is required to supply or to supply and install under the Contract, including, without limitation, the Products and/or Services and documentation, but excluding the Contractor’s Equipment.

“Implementation Schedule” means the Implementation Schedule as specified in the Agreed and Finalised Project Plan.

“Installation” means the preparation and placement of the System for use.

“Installation Services” means all Services required to achieve Installation.

“Intellectual Property Rights” means any and all copyright, moral rights, trademark, patent, and other intellectual and proprietary rights, title and interests worldwide, whether vested, contingent, or future, including without limitation all economic rights and all exclusive rights to reproduce, fix, adapt, modify, translate, create derivative works from, extract or re-utilize data from, manufacture, introduce into circulation, publish, distribute, sell, license, sublicense, transfer, rent, lease, transmit or provide access electronically, broadcast, display, enter into

computer memory, or otherwise use any portion or copy, in whole or in part, in any form, directly or indirectly, or to authorize or assign others to do so.

“Month” means calendar month.

“Operational Acceptance” means the acceptance by the Employer of the Facilities (or any part of the Facilities where the Contract provides for acceptance of the Facilities in parts), which certifies the Contractor’s fulfillment of the Contract in respect of Functional Guarantees of the Facilities (or the relevant part thereof) in accordance with the provisions of GC Clause 30 (Functional Guarantees) hereof and shall include deemed acceptance in accordance with GC Clause 27 (Commissioning and Operational Acceptance) hereof.

“Operational Acceptance Certificate” or “Operational Acceptance Certification” means the written certification provided by the Employer to the Contractor after Operational Acceptance.

“Operational Acceptance Test” and “Operational Acceptance Testing” mean the process of determining whether the criteria for Operational Acceptance have been satisfied.

“Origin” means the place where the Products were produced or from which the Services are supplied. Products are produced when, through manufacturing, processing, software development, or substantial and major assembly or integration of components, a commercially recognized product results that is substantially different in basic characteristics or in purpose or utility from its components. The Origin of Products and Services is distinct from the nationality of the Contractor and may be different.

“Packaged Software” means the software Product, the subject of the Licence, specified in the SOR including any updates or new releases, modifications, enhancements, Documentation, flow charts, logic diagrams and listings.

“Party” means the Employer or the Contractor, as the context requires, and “Parties” means both of them.

“PC” means the Particular Conditions.

“Precommissioning” means the testing, checking and other requirements specified in the Schedule of Requirements that are to be carried out by the Contractor in preparation for Commissioning as provided in GC Clause 8 (Time for Commencement and Completion) hereof.

“Preventive Maintenance” means the care and servicing by personnel for the purpose of maintaining Hardware in satisfactory operating condition by providing for systematic inspection, detection, and correction of incipient failures either before they occur or before they develop into major defects. Preventive Maintenance is usually costed as a fixed fee over the maintenance period.

“Post-Warranty Services Period” means the number of years defined in the PC (if any), following the expiration of the Warranty Period during

which the Contractor is obligated to provide Software licenses, maintenance, and/or technical support services for the System, either under this Contract or under separate contract(s).

“Procurement Guidelines” refers to the ADB *Procurement Guidelines*.

“Product” means a product deliverable specified in the Schedule of Requirements which is to be supplied to the Employer by or on behalf of the Contractor, including but not limited to all information processing and communications-related Hardware, Software, consumable items, plans and/or any supporting documentation, and including such integrations and configurations as are required to perform its function.

“Project Manager” means the person appointed by the Employer in the manner provided in GC Clause 18.1 (Representatives) hereof and named as such in the PC to perform the duties delegated by the Employer.

“Project Plan” means the set of tasks required to achieve Completion, Operational Acceptance and Commissioning, as described in the Agreed and Finalized Project Plan.

“Project Site(s)” means the place(s) specified in the PC for delivery of the IT Products and/or Services.

“Rental Items” means the Hardware rented or leased by the Employer from the Contractor under a lease agreement for a rental fee.

“Schedule of Requirements (SOR)” means the Schedule of Requirements Section of the Bidding Documents as amended and appended to the Contract including to the extent relevant, but not limited to, the following:

- (a) Background and Procurement Objectives;
- (b) Scope of works, including Technical Requirements;
- (c) Agreed and Finalized Project Plan;
- (d) Implementation Schedule;
- (e) Service Level Agreement.

“Services” means all technical, logistical, management, consultancy and any other Services as specified in the Schedule of Requirements to be provided by the Contractor under the Contract to supply, install, customize, integrate, and make operational the Products provided. Such Services may include, but are not restricted to, activity management and quality assurance, design, development, customization, documentation, transportation, insurance, inspection, expediting, site preparation, Installation, integration, training, data migration, Pre-commissioning, Commissioning, maintenance, and technical support.

“Site” means the place(s) specified in the PC for Installation and Commissioning of the IT Products and/or Services.

“Software” means the items to be supplied under this Contract as specified at Appendix 4 to this Contract.

“Software Support Services” means the Services specified in the SOR to be provided by the Contractor to the Employer in respect of the Packaged Software.

“Source Code” means the database structures, dictionaries, definitions, program source files, and any other symbolic representations necessary for the compilation, execution, and subsequent maintenance of the Software (typically, but not exclusively, required for Custom Software).

“Standard Documentation” means all Documentation not specified as Custom Documentation.

“Standard Software” means Software identified as such in Appendix 4 of the Contract and such other Software as the parties may agree in writing to be Standard Software.

“Sub-Contractor” means any third-party provider with whom the Contractor contracts for the supply or execution of any part of the Products and/or Services to be provided by under the Contract and includes its legal successors or permitted assigns.

“System” or “Sub-system” means a combination of Products which are integrated so as to operate together.

“Time for Operational Acceptance” means the time within which Operational Acceptance of the Facilities as a whole (or of a part of the Facilities where a separate Time for Operational Acceptance of such part has been prescribed) is to be achieved, as referred to in GC Sub-Clause 27.2 (Operational Acceptance) and in accordance with the relevant provisions of the Contract.

“Time for Completion” means the time within which Completion of the Facilities as a whole (or of a part of the Facilities where a separate Time for Completion of such part has been prescribed) is to be attained, as referred to in GC Sub-Clause 8.2 (Time for Commencement and Completion) and in accordance with the relevant provisions of the Contract.

“Training Schedule” means the programme of training including dates and training topics to be provided by the Contractor to the Employer’s personnel.

“Warranty Period” means the period defined in the SOR by which the Contractor warrants its Products will remain defect-free, and any remediation of any defect that arises in this period will be the responsibility of the Contractor and costs of such remediation will be borne by the Contractor.

“Week” means seven (7) consecutive Days, beginning the day of the week as is customary in the Employer’s Country.

“Year” means 365 days.

2. Contract Documents

- 2.1 Subject to Article 1.2 (Order of Precedence) of the Contract, all documents forming part of the Contract (and all parts thereof) are

intended to be correlative, complementary and mutually explanatory. The Contract shall be read as a whole.

- 2.2 In the event and to the extent of any inconsistency between two or more documents that form part of this Contract, those documents will be interpreted in the following order of precedence:
- (a) Appendix 15 (Minutes of Contract Finalisation Discussions and Agreed Contract Amendments) attached to the Contract;
 - (b) the Contract and Appendices 1 to 7 and 9 to 14 attached to the Contract;
 - (c) the PC and its Appendices;
 - (d) all GCs (including documents incorporated by reference in these terms and conditions);
 - (e) Appendix 8 (Agreed and Finalized Project Plan) attached to the Contract;
 - (f) the Contractor's bid and original Price Schedules; and
 - (g) the remaining appendixes to these GCs (including documents incorporated by reference in any Appendix).

3. Interpretation

- 3.1 In the Contract, except where the context requires otherwise:
- (a) words indicating one gender include all genders;
 - (b) words indicating the singular also include the plural and words indicating the plural also include the singular;
 - (c) provisions including the word "agree", "agreed" or "agreement" require the agreement to be recorded in writing;
 - (d) "written" or "in writing" means hand-written, type-written, printed or electronically made, and resulting in a permanent record.

The marginal words and other headings shall not be taken into consideration in the interpretation of these Conditions.

3.2 Incoterms

Unless inconsistent with any provision of the Contract, the meaning of any trade term and the rights and obligations of Parties thereunder shall be as prescribed by Incoterms.

Incoterms means international rules for interpreting trade terms published by the International Chamber of Commerce (latest edition), 38 Cours Albert 1^{er}, 75008 Paris, France.

3.3 Entire Agreement

Subject to GC Sub-Clause 17.6 hereof, the Contract constitutes the entire agreement between the Employer and Contractor with respect to the subject matter of Contract and supersedes all communications, negotiations and agreements (whether written or oral) of Parties with respect thereto made prior to the date of Contract.

3.4 Amendment

No amendment or other variation of the Contract shall be effective unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each Party hereto.

3.5 Independent Contractor

The Contractor shall be an independent contractor performing the Contract. The Contract does not create any agency, partnership, joint venture or other joint relationship between the Parties hereto. Subject to the provisions of the Contract, the Contractor shall be solely responsible for the manner in which the Contract is performed. All employees, representatives or Sub-Contractors engaged by the Contractor in connection with the performance of the Contract shall be under the complete control of the Contractor and shall not be deemed to be employees of the Employer, and nothing contained in the Contract or in any subcontract awarded by the Contractor shall be construed to create any contractual relationship between any such employees, representatives or Sub-Contractors and the Employer.

3.6 Non-Waiver

3.6.1 Subject to GC Sub-Clause (b) below, no relaxation, forbearance, delay or indulgence by either Party in enforcing any of the terms and conditions of the Contract or the granting of time by either Party to the other shall prejudice, affect or restrict the rights of that Party under the Contract, nor shall any waiver by either Party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.

3.6.2 Any waiver of a Party's rights, powers or remedies under the Contract must be in writing, must be dated and signed by an authorized representative of the Party granting such waiver, and must specify the right and the extent to which it is being waived.

3.7 Severability

If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.

**4. Communica-
tions**

4.1 Wherever these General Conditions provide for the giving or issuing of approvals, certificates, consents, determinations, notices, requests and discharges, these communications shall be:

- (a) in writing and delivered against receipt; and
- (b) delivered, sent or transmitted to the address for the recipient's communications as stated in the Contract.

4.2 When a certificate is issued to a Party, the certifier shall send a copy to the other Party. When a notice is issued to a Party, by the other Party or the Project Manager, a copy shall be sent to the Project Manager or the other Party, as the case may be.

4.3 Communications shall be deemed to include any approvals, consents, instructions, orders, and certificates to be given under the Contract.

- 5. Law and Language**
- 5.1 The Contract shall be governed by and interpreted in accordance with laws of the country specified in the PC.
- 5.2 The ruling language of the Contract shall be that stated in the PC.
- 5.3 The language for communications shall be the ruling language unless otherwise stated in the PC.
- 6. Corrupt Practices**
- 6.1 ADB's Anticorruption Policy requires that Borrowers (including beneficiaries of Bank-financed activity), as well as bidders, suppliers and contractors under Bank-financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, ADB:
- (a) defines, for the purposes of this provision, the terms set forth below as follows:
- (i) "corrupt practice" means the offering, giving receiving, or soliciting, directly or indirectly, of any thing of value to influence the action of any party in the procurement process or the execution of a contract;
- (ii) "fraudulent practice" means a misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract;
- (iii) "collusive practices" means a scheme or arrangement between two or more bidders, with or without the knowledge of the Borrower, designed to influence the action of any party in a procurement process or the execution of a contract;
- (iv) "coercive practices" means harming or threatening to harm, directly or indirectly, persons, or their property to influence their participation in a procurement process, or affect the execution of a contract;
- (b) will cancel the portion of the financing allocated to a contract if it determines at any time that representatives of the Borrower or of a beneficiary of ADB-financing engaged in corrupt, fraudulent, collusive, or coercive practices during the procurement or the execution of that contract, without the Borrower having taken timely and appropriate action satisfactory to ADB to remedy the situation;
- (c) will sanction a party or its successor, including declaring ineligible, either indefinitely or for a stated period of time, to participate in Bank-financed activities if it at any determines that the firm has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for, or in executing, a Bank-financed contract; and
- (d) will have the right to require suppliers and contractors to permit ADB or its representative to inspect their accounts and records and other documents relating to the bid submission and contract performance and to have them audited by auditors appointed by ADB.

B. Subject Matter of Contract

7. Scope of Facilities

7.1 Unless otherwise expressly limited in the SOR, the Contractor shall:

- (a) provide the Products and Services as specified in the SOR;
- (b) be responsible for timely provision of all resources, information, and decision making under its control that are necessary to reach a mutually Agreed and Finalized Project Plan pursuant to GC Clause 19 (Project Planning and Performance) within the time schedule specified in the Implementation Schedule. Failure to provide such resources, information, and decision making may constitute grounds for termination pursuant to GC Clause 47 (Termination for Contractor's Default);
- (c) provide all Documentation and Products as well as the performance of all Products and Services, in accordance with the plans, procedures, specifications, drawings, codes, and any other documents specified in the SOR and/or the Agreed and Finalized Project Plan;
- (d) unless specifically excluded in the Contract, perform all such work and/or supply all such items and materials not specifically mentioned in the Contract but that can be reasonably inferred from the Contract as being required for attaining Completion of the Products and Services as if such work and/or items and materials were expressly mentioned in the Contract; and
- (e) provide Products and Services as implied by the Recurrent Cost Form of the Contractor's bid, such as consumables, spare parts, and technical services (e.g., maintenance, technical assistance, and operational support), such as are specified in the SOR, including the relevant terms, characteristics, and timings.

8. Time for Commencement and Completion

8.1 The Contractor shall commence work on the Facilities within the period specified in the PC and without prejudice to GC Sub-Clause 26.2 (Completion) hereof, the Contractor shall thereafter proceed with the Facilities in accordance with the time schedule specified in the Implementation Schedule and any refinements made in the Agreed and Finalized Project Plan.

8.2 The Contractor shall attain Completion of the Facilities or of a part where a separate time for Completion of such part is specified in the Contract, within the time stated in the PC or within such extended time to which the Contractor shall be entitled under GC Clause 44 (Extension of Time for Completion) hereof.

9. Contractor's Responsibilities

9.1 The Contractor shall conduct all activities with due care and diligence, in accordance with the Contract and with the skill and care expected of a competent provider of IT Products and/or Services, information systems, support, maintenance, training, and other related services, or in accordance with best industry practices. When completed, the IT Products and/or Services should be fit for the purposes for which they are intended as defined in the Contract.

9.2 The Contractor confirms that it has entered into this Contract on the basis of a proper examination of the Employer's existing equipment, installations and including reviewing any hardware, software and data interfaces as provided by the Employer, and on the basis of information

that the Contractor could have obtained from a visual inspection of the Site if access thereto was available and of other data readily available to it relating to the Facilities as of the date twenty-eight (28) days prior to bid submission. The Contractor acknowledges that any failure to acquaint itself with all such data and information shall not relieve its responsibility for properly estimating the difficulty or cost of successfully performing the Contract.

- 9.3 The Contractor shall acquire and pay for all permits, approvals and/or licenses from all local, state or national government authorities or public service undertakings in the country where the Site is located which such authorities or undertakings require the Contractor to obtain in its name and which are necessary for the performance of the Contract, including, without limitation, visas for the Contractor's and Sub-Contractor's personnel and entry permits for all imported Contractor's Equipment. The Contractor shall acquire all other permits, approvals and/or licenses that are not the responsibility of the Employer under GC Clause 10 hereof and that are necessary for the performance of the Contract.
- 9.4 The Contractor shall comply with all laws in force in the country where the IT Products and/or Services are to be installed. The laws will include all local, state, national or other laws that affect the performance of the Contract and bind upon the Contractor. The Contractor shall indemnify and hold harmless the Employer from and against any and all liabilities, damages, claims, fines, penalties and expenses of whatever nature arising or resulting from the violation of such laws by the Contractor or its personnel, including the Sub-Contractors and their personnel, but without prejudice to GC Clause 10 (Employer's Responsibilities) hereof.
- 9.5 Any IT Products and/or Services that will be incorporated in or be required for the Facilities and other supplies shall have as their origin an Eligible Country. Any Sub-Contractors retained by the Contractor shall have as their origin an Eligible Country
- 9.6 The Contractor shall permit ADB to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors appointed by ADB, if so required by ADB.
- 9.7 If the Contractor is a joint venture or consortium of two or more parties, all such parties shall be jointly and severally bound to the Employer for the fulfillment of the provisions of the Contract and shall designate one of such parties to act as a leader with authority to bind the joint venture or consortium. The composition or the constitution of the joint venture or consortium shall not be altered without the prior consent of the Employer.
- 9.8 The Contractor shall, in all dealings with its labor and the labor of its Sub-Contractors currently employed on or connected with the Contract, pay due regard to all recognized festivals, official holidays, religious or other customs, and all local laws and regulations pertaining to the employment of labor.
- 9.9 Other Contractor responsibilities, if any, are as stated in the SOR.

10. Employer's Responsibilities

- 10.1 The Employer shall ensure the accuracy of all information and/or data to be supplied by the Employer to the Contractor, except when otherwise expressly stated in the Contract.
- 10.2 The Employer shall be responsible for timely provision of all resources, information, and decision making under its control that are necessary to reach an Agreed and Finalized Project Plan (pursuant to GC Sub-Clause 19.2 (Project Planning and Performance) within the time schedule specified in the Implementation Plan in the SOR. Failure to provide such resources, information, and decision making may constitute grounds for termination pursuant to GC Clause 48 (Termination by Contractor).
- 10.3 The Employer shall be responsible for acquiring and providing legal and physical possession of the Site and access to it, and for providing possession of and access to all other areas reasonably required for the proper execution of the Contract.
- 10.4 The Employer shall acquire and pay for all permits, approvals and/or licenses from all local, state or national government authorities or public service undertakings in the country where the Site is located which (a) such authorities or undertakings require the Employer to obtain in the Employer's name, (b) are necessary for the execution of the Contract, including those required for the performance by both the Contractor and the Employer of their respective obligations under the Contract, and (c) are specified in the SOR.
- 10.5 If requested by the Contractor, the Employer shall use its best endeavors to assist the Contractor in obtaining in a timely and expeditious manner all permits, approvals and/or licenses necessary for the execution of the Contract from all local, state or national government authorities or public service undertakings that such authorities or undertakings require the Contractor or Sub-Contractors or the personnel of the Contractor or Sub-Contractors, as the case may be, to obtain.
- 10.6 In such cases where the responsibilities of specifying and acquiring or upgrading telecommunications and/or electric power services falls to the Contractor, as specified in the SOR, PC, Agreed and Finalized Project Plan, or other parts of the Contract, the Employer shall use its best endeavors to assist the Contractor in obtaining such services in a timely and expeditious manner.
- 10.7 The Employer shall be responsible for timely provision of all resources, access, and information necessary for the provision of the IT Products and/or Services (including, but not limited to, any required telecommunications or electric power services), as identified in the Agreed and Finalized Project Plan, except where provision of such items is explicitly identified in the Contract as being the responsibility of the Contractor. Delay by the Employer may result in an appropriate extension of the Time for Operational Acceptance, at the Contractor's discretion.
- 10.8 Unless otherwise specified in the Contract or agreed upon by the Employer and the Contractor, the Employer shall provide sufficient, properly qualified operating and technical personnel as required by the

Contractor to properly carry out the provision of the IT Products and/or Services at or before the time specified in the Implementation Schedule and the Agreed and Finalized Project Plan.

- 10.9 The Employer will designate appropriate staff for the training courses to be given by the Contractor and shall make all appropriate logistical arrangements for such training as specified in the SOR, PC, the Agreed and Finalized Project Plan, or other parts of the Contract.
- 10.10 The Employer assumes primary responsibility for the Operational Acceptance Test(s) for the IT Products and/or Services, in accordance with GC Sub-Clause 27.2 (Operational Acceptance Test), and shall be responsible for the continued operation of the Products after Operational Acceptance. However, this shall not limit in any way the Contractor's responsibilities after the date of Operational Acceptance otherwise specified in the Contract.
- 10.11 During the development of the Products and/or Services, the Contractor is responsible for performing and safely storing timely and regular backups of its data and Software in accordance with accepted data management principles. Following Commissioning and Acceptance, the Employer is responsible for backups.
- 10.12 All costs and expenses involved in the performance of the obligations under this GC Clause 10 shall be the responsibility of the Employer, save those to be incurred by the Contractor with respect to the performance of the Operational Acceptance Test(s), in accordance with GC Sub-Clause 27.2.
- 10.13 In the event that the Employer shall be in breach of any of its obligations under this Clause, the additional cost incurred by the Contractor in consequence thereof shall be determined by the Project Manager and added to the Contract Price.
- 10.14 Other Employer responsibilities, if any, are as stated in the SOR.

C. Payment

- | | |
|-----------------------------|--|
| 11. Contract Price | <p>11.1 The Contract Price shall be as specified in Article 2 (Contract Price and Terms of Payment) of the Contract.</p> <p>11.2 Unless an adjustment clause is provided for in the PC, the Contract Price shall be a firm lump sum not subject to any alteration, except in the event of a Change in the SOR or as otherwise provided in the Contract.</p> <p>11.3 Subject to GC Sub-Clauses 9.2, 10.1 and 39 (Unforeseen Conditions) hereof, the Contractor shall be deemed to have satisfied itself as to the correctness and sufficiency of the Contract Price, which shall, except as otherwise provided for in the Contract, cover all its obligations under the Contract.</p> |
| 12. Terms of Payment | <p>12.1 The Contractor's request for payment shall be made to the Employer in writing, accompanied by</p> <p style="margin-left: 40px;">(a) an invoice describing, as appropriate,</p> |

- (a) the IT Products and/or Services provided;
 - (b) when the IT Products and/or Services were supplied and (if applicable) accepted; and
 - (c) the amount payable in respect of each item, and
- (b) documents submitted pursuant to GC Sub-Clause 22.5 (Transport and Delivery) and upon fulfillment of other obligations stipulated in the Contract.
- 12.2 The Contract Price shall be paid as specified in Appendix 7 (Terms and Procedures of Payment) to the Contract.
- 12.3 No payment made by the Employer herein shall be deemed to constitute acceptance by the Employer of the IT Products and/or Services or any part(s) thereof.
- 12.4 Payments shall be made promptly by the Employer, but in no case later than forty-five (45) days after submission of a valid invoice by the Contractor. In the event that the Employer fails to make any payment by its respective due date or within the period set forth in the Contract, the Employer shall pay to the Contractor interest on the amount of such delayed payment at the rate(s) specified in Appendix 7 (Terms and Procedures of Payment) to the Contract for the period of delay until payment has been made in full, whether before or after judgment or arbitration award.
- 12.5 All payments shall be made in the currency(ies) specified in the Contract, pursuant to GC Clause 11. For IT Products and/or Services supplied locally, payments shall be made in the currency of the Employer's Country, unless otherwise specified in Appendix 7 (Terms and Procedures of Payment) to the Contract.
- 12.6 Unless otherwise specified in Appendix 7 (Terms and Procedures of Payment), to the Contract, payment of the foreign currency portion of the Contract Price for Products supplied from outside the Employer's Country shall be made to the Contractor through the irrevocable letter of credit opened by an authorized bank in the Contractor's Country and will be payable on presentation of the appropriate documents. It is agreed that the letter of credit will be subject to Article 10 of the latest revision of Uniform Customs and Practice for Documentary Credits, published by the International Chamber of Commerce, Paris.

13. Securities

- 13.1 Issuance of Securities
The Contractor shall provide the securities specified below in favor of the Employer at the times, and in the amount, manner and form specified below.
- 13.2 Advance Payment Security
- (a) If specified in the PC, the Contractor shall, within twenty-eight (28) days of the notification of Contract award, provide a security equal in the amount and currency to the advance payment, and valid until the IT Products and/or Services achieve Operational Acceptance.

- (b) The security shall be in the form provided in the Bidding Documents or in another form acceptable to the Employer. The amount of the security shall be reduced in proportion to the value of the IT Products and/or Services executed by and paid to the Contractor from time to time, and shall automatically become null and void when the full amount of the advance payment has been recovered by the Employer. The way the value of the security is deemed to become reduced and, eventually, voided is as specified in the PC. The security shall be returned to the Contractor immediately after its expiration.

13.3 Performance Security

- (a) The Contractor shall, within twenty-eight (28) days of the notification of Contract award, provide a security for the due performance of the Contract in the amount specified in the PC.
- (b) The security shall be a bank guarantee in the form provided in Section IX (Contract Forms) or it shall be in another form acceptable to the Employer.
- (c) The performance security shall automatically become null and void once all the obligations of the Contractor under the Contract have been fulfilled, including, but not limited to, any obligations during the Warranty Period and any extensions to the period. The security shall be returned to the Contractor no later than twenty-eight (28) days after its expiration.
- (d) Upon Operational Acceptance of the IT Products and/or Services, the security shall be reduced to the amount specified in the PC, on the date of such Operational Acceptance, so that the reduced security would only cover the remaining warranty obligations of the Contractor.
- (e) The Employer shall not make a claim under the performance security, except for amounts to which the Employer is entitled under the Contract. The Employer shall indemnify and hold the Contractor harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from a claim under the performance security to the extent to which the Employer was not entitled to make the claim.

- 14. Taxes and Duties**
- 14.1 For IT Products and/or Services supplied from outside the Employer's country, the Contractor shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies, payable in the Employer's country. Any duties, such as importation or customs duties, and taxes and other levies, payable in the Employer's country for the supply of Products and Services from outside the Employer's country are the responsibility of the Employer unless these duties or taxes have been made part of the Contract Price in Article 2 of the Contract and the Price Schedule to which it refers, in which case the duties and taxes will be the Contractor's responsibility.
 - 14.2 For IT Products and/or Services supplied locally, the Contractor shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Products or Services to the Employer. The only exceptions are taxes or duties, such as value-added or sales

tax or stamp duty as apply to, or are clearly identifiable, on the invoices and provided they apply in the Employer's country, and only if these taxes, levies and/or duties are also excluded from the Contract Price in Article 2 of the Contract and the Price Schedule to which it refers.

- 14.3 If any tax exemptions, reductions, allowances or privileges may be available to the Contractor in the country where the Site is located, the Employer shall use its best endeavors to enable the Contractor to benefit from any such tax savings to the maximum allowable extent.
- 14.4 For the purpose of the Contract, it is agreed that the Contract Price specified in Article 2 (Contract Price and Terms of Payment) of the Contract is based on the taxes, duties, levies and charges prevailing at the date twenty-eight (28) days prior to the date of bid submission in the country where the Site is located (hereinafter called "Tax" in this GC Sub-Clause 14.4). If any rates of Tax are increased or decreased, a new Tax is introduced, an existing Tax is abolished, or any change in interpretation or application of any Tax occurs in the course of the performance of Contract, which was or will be assessed on the Contractor, Sub-Contractors or their employees in connection with performance of the Contract, an equitable adjustment of the Contract Price shall be made to fully take into account any such change by addition to the Contract Price or deduction therefrom, as the case may be, in accordance with GC Clause 40 (Change in Laws and Regulations) hereof.

D. Intellectual Property

15. Intellectual Property and Copyright

- 15.1 The Intellectual Property Rights in all IT Products and/or Services Documentation and Software shall remain vested in the owner of such rights where it existed prior to commencement of this Contract.
- 15.2 The Employer agrees to restrict use, copying, or duplication of any Hardware, Software and Documentation, except that additional copies of Documentation may be made by the Employer for use within the scope of the project, in the event that the Contractor does not deliver copies within twenty-eight (28) days from receipt of a request for such Documentation.
- 15.3 The Employer's contractual rights to use the Standard Software or elements of the Standard Software may not be assigned, licensed, or otherwise transferred voluntarily except in accordance with the relevant license agreement or as may be otherwise specified in the PC.
- 15.4 As applicable, the Employer's and Contractor's rights and obligations with respect to Custom Software or elements of the Custom Software, including any license agreements, and with respect to Custom Documentation or elements of the Custom Documentation, are specified in the PC. Subject to the PC, the Intellectual Property Rights in all Custom Software and Custom Documentation specified in Appendices 4 and 5 of the Contract (if any) shall, at the date of this Contract or on creation of the rights (if later than the date of this Contract), vest in the Employer. The Contractor shall do and execute or arrange for the doing and executing of each necessary act,

document, and thing that the Employer may consider necessary or desirable to perfect the right, title, and interest of the Employer in and to those rights. In respect of such Custom Software and Custom Documentation, the Contractor shall ensure that the holder of a moral right in such an item does not assert it, and the Contractor shall, if requested to do so by the Employer and where permitted by applicable law, ensure that the holder of such moral right waives it.

15.5 The parties shall enter into such (if any) escrow arrangements in relation to the Source Code for some or all of the Software as are specified in the PC.

16. Software Services and License Agreements

16.1 Except to the extent that the Intellectual Property Rights in the Software vest in the Employer, the Contractor hereby grants to the Employer license to access and use the Software, including all inventions, designs, and marks embodied in the Software.

Such license to access and use the Software shall:

- (a) be:
 - (i) nonexclusive;
 - (ii) fully paid up and irrevocable (except that it shall terminate if the Contract terminates under GC Clause 46);
 - (iii) valid throughout the territory of the Employer's Country (or such other territory as specified in the PC); and
 - (iv) subject to additional restrictions (if any) as specified in the PC,
- (b) permit the Software to be:
 - (i) used or copied for use on or with the computer(s), users or environment(s) for which it was acquired (as specified in the SOR and/or Contractor's bid), plus a backup of the same or similar capacity. Such backup shall be used if the primary is(are) inoperative, and during a reasonable transitional period when use is being transferred between primary and backup;
 - (ii) as specified in the PC, used or copied for use on or transferred to a replacement computer(s) or users (and use on the original and replacement computer(s) users or environment(s) may be simultaneous during a reasonable transitional period) provided that, if the SOR and/or Contractor's bid specifies a class of computer, user or environment to which the license is restricted and unless the Contractor agrees otherwise in writing, the replacement computer(s) is(are) within that class;
 - (iii) if the nature of the Products is such as to permit such access, accessed from other computers connected to the primary and/or backup computer(s) by means of a local or wide-area network or similar arrangement, and

used on or copied for use on those other computers to the extent necessary to that access;

- (iv) reproduced for safekeeping or backup purposes;
- (v) customized, adapted, or combined with other computer software for use by the Employer, provided that derivative software incorporating any substantial part of the delivered, restricted Software shall be subject to same restrictions as are set forth in this Contract;
- (vi) as specified in the PC, disclosed to, and reproduced for use by, support service contractors and their subcontractors, (and the Employer may sublicense such persons to use and copy for use the Software) to the extent reasonable necessary to the performance of their support service contracts, subject to the same restrictions as are set forth in this Contract; and
- (vii) disclosed to, and reproduced for use by, the Employer and by such other persons as are specified in the PC (and the Employer may sublicense such persons to use and copy for use the Software), subject to the same restrictions as are set forth in this Contract.

16.2 The Standard Software may be subject to audit by the Contractor, in accordance with the terms specified in the PC, to verify compliance with the above license agreements.

16.3 The Employer will require the Contractor to meet the mandatory requirements for Licensing Agreements as specified in the SOR.

17. Confidential Information

17.1 The Employer (“the Disclosing Party”) and the Contractor (“the Receiving Party”) shall keep confidential and shall not, without the written consent of the other Party hereto, divulge to any third Party any documents, data or other information furnished directly or indirectly by the other Party hereto in connection with the Contract (Confidential Information), whether such information has been furnished prior to, during or following termination of the Contract.

17.2 For the purposes of GC Sub-Clause 17.1, the Contractor is also deemed to be the Receiving Party of Confidential Information generated by the Contractor itself in the course of the performance of its obligations under the Contract and relating to the businesses, finances, contractors, employees, or other contracts of the Employer or the Employer’s use of the IT Products and/or Services.

17.3 Notwithstanding GC Sub-Clauses 17.1 and 17.2:

- (a) the Contractor may furnish to its Sub-Contractor Confidential Information of the Employer to the extent reasonably required for the Sub-Contractor to perform its work under the Contract; and
- (b) the Employer may furnish Confidential Information of the Contractor: (i) to support service contractors and their sub-contractors to the extent reasonably required for them to

perform their work under their support service contracts; and
(ii) to its affiliates and subsidiaries,

in which event the Receiving Party shall ensure that the person to whom it furnishes Confidential Information of the Disclosing Party is aware of and abides by the Receiving Party's obligations under this GC Clause 17 as if that person were party to the Contract in place of the Receiving Party.

- 17.4 The Employer shall not, without the Contractor's prior written consent, use any Confidential Information received from the Contractor for any purpose other than the operation, maintenance and further development of the IT Products and/or Services. Similarly, the Contractor shall not, without the Employer's prior written consent, use any Confidential Information received from the Employer for any purpose other than those that are required for the performance of the Contract.
- 17.5 The obligation of a party under GC Sub-Clauses 17.1 through 17.4 above, however, shall not apply to that information which:
- (a) now or hereafter enters the public domain through no fault of the Receiving Party;
 - (b) can be proven to have been possessed by the Receiving Party at the time of disclosure and that was not previously obtained, directly or indirectly, from the Disclosing Party;
 - (c) otherwise, lawfully becomes available to the Receiving Party from a third party that has no obligation of confidentiality.
- 17.6 The above provisions of this GC Clause 17 shall not in any way modify any undertaking of confidentiality given by either of the parties to this Contract prior to the date of the Contract in respect of the System or any part thereof.
- 17.7 The provisions of this GC Clause 17 shall survive the termination, for whatever reason, of the Contract for three (3) Years.

E. Execution of the Facilities

18. Representatives

18.1 Project Manager

If the Project Manager is not named in the Contract, then within fourteen (14) days of the Effective Date, the Employer shall appoint and notify the Contractor in writing of the name of the Project Manager. The Employer may from time to time appoint some other person as the Project Manager in place of the person previously so appointed, and shall give a notice of the name of such other person to the Contractor without delay. No such appointment shall be made at such a time or in such a manner as to impede the progress of work on the Facilities. Such appointment shall only take effect upon receipt of such notice by the Contractor. The Project Manager shall represent and act for the Employer at all times during the performance of the Contract. All notices, instructions, orders, certificates, approvals and all other communications under the Contract shall be given by the Project Manager, except as herein otherwise provided.

All notices, instructions, information and other communications given by the Contractor to the Employer under the Contract shall be given to the Project Manager, except as herein otherwise provided.

18.2 Contractor's Representative

18.2.1 If the Contractor's Representative is not named in Appendix 1 (Contractor's Representative) of the Contract, then within fourteen (14) days of the Effective Date, the Contractor shall appoint the Contractor's Representative and shall request the Employer in writing to approve the person so appointed. The request must be accompanied by a detailed curriculum vitae for the nominee, as well as description of any other responsibilities the nominee would retain while performing the duties of the Contractor's Representative. If the Employer does not object to the appointment within fourteen (14) days, the Contractor's Representative shall be deemed to have been approved. If the Employer objects to the appointment within fourteen (14) days giving the reason therefore, then the Contractor shall appoint a replacement within fourteen (14) days of such objection, in accordance with this GC Sub-Clause 18.2.1.

18.2.2 Subject to the extensions and/or limitations specified in the SOR (if any), the Contractor's Representative shall have the authority to represent the Contractor on all day-to-day matters relating to the System or arising from the Contract. The Contractor's Representative shall give to the Project Manager all the Contractor's notices, instructions, information, and all other communications under the Contract.

18.3 All notices, instructions, information and all other communications given by the Employer or the Project Manager to the Contractor under the Contract shall be given to the Contractor's Representative or, in its absence, its deputy, except as otherwise provided for in this Contract.

18.3.1 The Contractor shall not revoke the appointment of the Contractor's Representative without the Employer's prior written consent, which shall not be unreasonably withheld. If the Employer consents to such an action, the Contractor shall appoint another person of equal or superior qualifications as the Contractor's Representative, pursuant to the procedure set out in GC Sub-Clause 18.2.1.

18.3.2 The Contractor's Representative and staff are obliged to work closely with the Project Manager and staff, act within their own authority, and abide by directives issued by the Employer that are consistent with the terms of the Contract. The Contractor's Representative is responsible for managing the activities of its personnel and any subcontracted personnel.

18.3.3 The Contractor's Representative may, subject to the approval of the Employer (which shall not be unreasonably withheld), at any time delegate to any person any of the powers, functions and authorities vested in him or her. Any

such delegation may be revoked at any time. Any such delegation or revocation shall be subject to a prior notice signed by the Contractor's Representative, and shall specify the powers, functions and authorities thereby delegated or revoked. No such delegation or revocation shall take effect unless and until a copy thereof has been delivered to the Employer and the Project Manager.

18.3.4 Any act or exercise by any person of powers, functions and authorities so delegated to him or her in accordance with this GC Sub-Clause 18.3(d) shall be deemed to be an act or exercise by the Contractor's Representative.

18.4 Objections and Removals

18.4.1 The Employer may by notice to the Contractor object to any representative or person employed by the Contractor in the execution of the Contract who, in the reasonable opinion of the Employer, may have behaved inappropriately, be incompetent, or be negligent. The Employer shall provide evidence of the same, whereupon the Contractor shall remove such person from work on the System.

18.4.2 If any representative or person employed by the Contractor is removed in accordance with GC Sub-Clause (a) above, the Contractor shall, where required, promptly appoint a replacement.

19. Project Planning and Performance

19.1 If specified in the SOR, the Contractor shall develop, in close cooperation with the Employer, and based on the Preliminary Project Plan included in the Contractor's bid, an Agreed and Finalized Project Plan encompassing the activities specified in the SOR.

19.2 The Agreed and Finalized Project Plan will be prepared by the Contractor and approved by the Employer in accordance with the procedure specified in the SOR.

19.3 If required, the impact on the Implementation Schedule of modifications agreed during finalization of the Agreed and Finalized Project Plan shall be incorporated in the Contract by amendment, in accordance with GC Clause 44 (Extension Time for Completion).

19.4 The Contractor shall undertake to supply, install, test, and commission the IT Products and/or Services in accordance with the SOR and Agreed and Finalized Project Plan.

19.5 The progress report and other reports specified in the SOR shall be prepared by the Contractor and submitted to the Employer in the format and frequency specified in the SOR.

19.6 If at any time the Contractor's actual progress falls behind the project schedule described in the Agreed and Finalized Project Plan, or it becomes apparent that it will so fall behind, the Contractor shall, at the request of the Employer or the Project Manager, prepare and submit to the Project Manager a revised project schedule, taking into account the prevailing circumstances, and shall notify the Project Manager of the steps being taken to expedite progress so as to attain Completion of the Facilities within the Time for Completion under GC

Sub-Clause 8.2, any extension thereof entitled under GC Sub-Clause 44.1 (Extension of Time for Completion), or any extended period as may otherwise be agreed upon between the Employer and the Contractor.

20. Subcontracting

- 20.1 Appendix 3 (List of Approved Sub-Contractors) to the Contract specifies critical items of supply or services and a list of Sub-Contractors for each item that are considered acceptable by the Employer. If no Sub-Contractors are listed for an item, the Contractor shall prepare a list of Sub-Contractors it considers qualified and wishes to be added to the list for such items. The Contractor may from time to time propose additions to or deletions from any such list. The Contractor shall submit any such list or any modification to the list to the Employer for its approval in sufficient time so as not to impede the progress of work on the System. The Employer shall not withhold such approval unreasonably. Such approval by the Employer of a Sub-Contractor(s) shall not relieve the Contractor from any of its obligations, duties, or responsibilities under the Contract.
- 20.2 The Contractor may, at its discretion, select and employ Sub-Contractors for such critical items from those Sub-Contractors listed pursuant to GC Sub-Clause 20.1. If the Contractor wishes to employ a Sub-Contractor not so listed, or subcontract an item not so listed, it must seek the Employer's prior approval under GC Sub-Clause 20.3.
- 20.3 For items for which pre-approved Sub-Contractor lists have not been specified in Appendix 3 to the Contract, the Contractor may employ such Sub-Contractors as it may select, provided: (i) the Contractor notifies the Employer in writing at least twenty-eight (28) days prior to the proposed mobilization date for such Sub-Contractor; and (ii) by the end of this period either the Employer has granted its approval in writing or fails to respond. The Contractor shall not engage any Sub-Contractor to which the Employer has objected in writing prior to the end of the notice period. The absence of a written objection by the Employer during the above specified period shall constitute formal acceptance of the proposed Sub-Contractor. Except to the extent that it permits, the deemed approval of the Employer of Sub-Contractors not listed in the Contract, nothing in this Clause, however, shall limit the rights and obligations of either the Employer or Contractor as they are specified in GC Sub-Clauses 20.1 and 20.2 or in Appendix 3 of the Contract.
- 20.4 Each sub-contract shall include provisions which would entitle the Employer to require the sub-contract to be assigned to the Employer under GC Sub-Clause 20.5 (if and when applicable), or in event of termination by the Employer under GC Clause 46.
- 20.5 If a Sub-Contractor's obligations extend beyond the expiry date of the relevant Defect Liability Period and the Project Manager, prior to that date, instructs the Contractor to assign the benefits of such obligations to the Employer, then the Contractor shall do so.

21. Design and Engineering

- 21.1 Technical Specifications and Drawings
- 21.1.1 The Contractor shall execute the basic and detailed design and the implementation activities necessary for successful provision of the IT Products and/or Services in compliance

with the provisions of the Contract or, where not so specified, in accordance with good industry practice.

The Contractor shall be responsible for any discrepancies, errors or omissions in the specifications, drawings and other technical documents that it has prepared, whether such specifications, drawings, and other documents have been approved by the Project Manager or not, provided that such discrepancies, errors, or omissions are not because of inaccurate information furnished in writing to the Contractor by or on behalf of the Employer.

21.1.2 The Contractor shall be entitled to disclaim responsibility for any design, data, drawing, specification, or other document, or any modification of such design, drawings, specification, or other documents provided or designated by or on behalf of the Employer, by giving a notice of such disclaimer to the Project Manager.

21.2 Codes and Standards

Wherever references are made in the Contract to codes and standards in accordance with which the Contract shall be executed, the edition or the revised version of such codes and standards current at the date twenty-eight (28) days prior to date of bid submission shall apply unless otherwise specified in the SOR. During Contract execution, any changes in such codes and standards shall be applied after approval by the Employer and shall be treated in accordance with GC Sub-Clause 43.3 (Changes Originating From Contractor).

21.3 Approval/Review of Technical Documents by Project Manager

21.3.1 The Contractor shall prepare or cause its Sub-Contractors to prepare, and furnish to the Project Manager the documents listed in the Appendix to the Contract titled List of Documents for Approval or Review, for its approval or review as specified and in accordance with the requirements of GC Sub-Clause 19.1.

21.3.2 Any part of the IT Products and/or Services covered by or related to the documents to be approved by the Project Manager shall be executed only after the Project Manager's approval thereof.

21.3.3 GC Sub-Clause 21.5 shall apply to those documents requiring the Project Manager's approval, but not to those furnished to the Project Manager for its review only.

21.4 Any part of the IT Products and/or Services covered by or related to the documents to be approved by the Project Manager shall be executed only after the Project Manager's approval of these documents.

21.5 GC Sub-Clauses 21.3.2 through 21.3.3 shall apply to those documents requiring the Project Manager's approval, but not to those furnished to the Project Manager for its review only.

- 21.5.1 Within fourteen (14) days after receipt by the Project Manager of any document requiring the Project Manager's approval in accordance with GC Sub-Clause 21.4, the Project Manager shall either return one copy of the document to the Contractor with its approval endorsed on the document or shall notify the Contractor in writing of its disapproval of the document and the reasons for disapproval and the modifications that the Project Manager proposes. If the Project Manager fails to take such action within the fourteen (14) days, then the document shall be deemed to have been approved by the Project Manager.
- 21.5.2 The Project Manager shall not disapprove any document, except on the grounds that the document does not comply with the Contract or that it is contrary to good engineering practice.
- 21.5.3 If the Project Manager disapproves the document, the Contractor shall modify the document and resubmit it for the Project Manager's approval in accordance with GC Sub-Clause 21.4. If the Project Manager approves the document subject to modification(s), the Contractor shall make the required modification(s), and the document shall be deemed to have been approved.
- 21.5.4 If any dispute or difference occurs between the Employer and the Contractor in connection with or arising out of the disapproval by the Project Manager of any document and/or any modification(s) to a document that cannot be settled between the Parties within a reasonable period, then, in case the Contract includes and names an Adjudicator, such dispute may be referred to the Adjudicator for determination in accordance with GC Clause 52 (Disputes and Arbitration). If such dispute is referred to an Adjudicator, the Project Manager shall give instructions as to whether and if so, how, performance of the Contract is to proceed. The Contractor shall proceed with the Contract in accordance with the Project Manager's instructions, provided that if the Adjudicator upholds the Contractor's view on the dispute and if the Employer has not given notice under GC Clause 52, then the Contractor shall be reimbursed by the Employer for any additional costs incurred by reason of such instructions and shall be relieved of such responsibility or liability in connection with the dispute and the execution of the instructions as the Adjudicator shall decide, and the Time for Operational Acceptance shall be extended accordingly.
- 21.5.5 The Project Manager's approval, with or without modification of the document furnished by the Contractor, shall not relieve the Contractor of any responsibility or liability imposed upon it by any provisions of the Contract except to the extent that any subsequent failure results from modifications required by the Project Manager or inaccurate information furnished in writing to the Contractor by or on behalf of the Employer.
- 21.5.6 The Contractor shall not depart from any approved document unless the Contractor has first submitted to the Project

Manager an amended document and obtained the Project Manager's approval of the document, pursuant to the provisions of this GC Sub-Clause 21.5. If the Project Manager requests any change in any already approved document and/or in any document based on such an approved document, the provisions of GC Clause 43 (Change in the Facility) shall apply to such request.

22. Transport and Delivery

22.1 Subject to GC Clauses 9 and 14, the Contractor shall manufacture or procure and transport all IT Products and/or Services in an expeditious and orderly manner to the Project Site.

22.2 Delivery of the IT Products and/or Services shall be made by the Contractor in accordance with the SOR.

22.3 Early or partial deliveries require the explicit written consent of the Employer, which consent shall not be unreasonably withheld.

22.4 Transportation

22.4.1 The Contractor shall provide such packing of the IT Products and/or Services as is required to prevent their damage or deterioration during shipment. The packing, marking, and documentation within and outside the packages shall comply strictly with the Employer's instructions to the Contractor.

22.4.2 The Contractor shall bear responsibility for and cost of transport to the Project Sites in accordance with the terms and conditions used in the specification of prices in Appendix 6 (Revised Price Schedules) to the Contract, including the terms and conditions of the associated Incoterms.

22.4.3 Unless otherwise specified in the PC, the Contractor shall be free to use transportation through carriers registered in any Eligible Country and to obtain insurance from any Eligible Country.

22.5 Unless otherwise specified in the PC, the Contractor shall provide the Employer with shipping and other documents, as specified below:

For Products supplied from outside the Employer's Country:

- (a) Upon shipment, the Contractor shall notify the Employer and the insurance company contracted by the Contractor to provide cargo insurance by cable, facsimile, electronic mail, or Electronic Data Interchange (EDI) with the full details of the shipment. The Contractor shall promptly send the following documents to the Employer by mail or courier, as appropriate, with a copy to the cargo insurance company:
 - (i) two copies of the Contractor's invoice showing the description of the Products, quantity, unit price, and total amount;
 - (ii) usual transportation documents;

- (iii) insurance certificate;
- (iv) certificate(s) of origin; and
- (v) estimated time and point of arrival in the Employer's Country and at the Project Sites.

For Products supplied locally (i.e. from within the Employer's Country):

- (b) Upon shipment, the Contractor shall notify the Employer by cable, facsimile, electronic mail, or EDI with the full details of the shipment. The Contractor shall promptly send the following documents to the Employer by mail or courier, as appropriate:
 - (i) two copies of the Contractor's invoice showing the Products' description, quantity, unit price, and total amount;
 - (ii) delivery note, railway receipt, or truck receipt;
 - (ii) certificate of insurance;
 - (iii) certificate(s) of origin; and
 - (iv) estimated time of arrival at the Project Sites.

22.6 Customs clearance

22.6.1 The Employer shall bear responsibility for, and cost of, customs clearance into the Employer's Country in accordance with the particular Incoterm(s) used for Products supplied from outside the Employer's Country in the Price Schedules referred to by Article 2 of the Contract.

22.6.2 At the request of the Employer, the Contractor shall make available a representative or agent during the process of customs clearance in the Employer's Country for Products supplied from outside the Employer's Country. In the event of delays in customs clearance that are not the fault of the Contractor:

- (a) the Contractor shall be entitled to an extension in the Time for Achieving Operational Acceptance, pursuant to GC Clause 44 (Extension of Time for Completion);
- (b) the Contract Price shall be adjusted to compensate the Contractor for any additional storage charges that the Contractor may incur as a result of the delay.

23. Product Upgrades 23.1 At any point during performance of the Contract, should technological advances be introduced by the Contractor for the IT Products and/or Services originally offered by the Contractor in its bid and still to be delivered, the Contractor shall be obligated to offer to the Employer the latest versions of the available information technologies having equal or better performance or functionality at

the same or lesser unit prices, pursuant to GC Clause 43 (Change in the Facility).

- 23.2 At any point during performance of the Contract, for IT Products and/or Services still to be delivered, the Contractor will also pass on to the Employer any cost reductions and additional and/or improved support and facilities that it offers to other clients of the Contractor in the Employer's Country, pursuant to GC Clause 43.
- 23.3 During performance of the Contract, the Contractor shall offer to the Employer all new versions, releases, and updates of Standard Software, as well as related documentation and technical support services, within thirty (30) days of their availability from the Contractor to other clients of the Contractor in the Employer's Country, and no later than twelve (12) months after they are released in the country of origin. In no case will the prices for this Software exceed those quoted by the Contractor in the Recurrent Costs tables in its bid.
- 23.4 During the Warranty Period, unless otherwise specified in the PC, the Contractor will provide at no additional cost to the Employer all new versions, releases, and updates for all Standard Software that are used in with the IT Products and/or Services, within thirty (30) days of their availability from the Contractor to other clients of the Contractor in the Employer's country, and no later than twelve (12) months after they are released in the Country of Origin of the Software.
- 23.5 The Employer shall introduce all new versions, releases or updates of the Software within eighteen (18) months of receipt of a production-ready copy of the new version, release, or update, provided that the new version, release, or update does not adversely affect System operation or performance or require extensive reworking of the System. In cases where the new version, release, or update adversely affects System operation or performance, or requires extensive reworking of the System, the Contractor shall continue to support and maintain the version or release previously in operation for as long as necessary to allow introduction of the new version, release, or update. In no case shall the Contractor stop supporting or maintaining a version or release of the Software less than twenty-four (24) months after the Employer receives a production-ready copy of a subsequent version, release, or update. The Employer shall use all reasonable endeavors to implement any new version, release, or update as soon as practicable, subject to the twenty four-month-long stop date.
- 24. IT Products and/or Services**
- 24.1 Prices charged by the Contractor for IT Products and/or Services, that are not included in the Contract, shall be agreed upon in advance by the parties (including, but not restricted to, any prices submitted by the Contractor in the Recurrent Cost Schedules of its Bid) and shall not exceed the prevailing rates charged by the Contractor to other Employers in the Employer's Country for similar IT Products and/or Services.
- 25. Inspection and Testing**
- 25.1 The Employer or its representative shall have the right to inspect and/or test any components of the IT Products and/or Services, as

specified in the SOR, or specify such tests to be executed by the Contractor, to confirm their good working order and/or conformity to the Contract at the point of delivery and/or at the Project Site.

- 25.2 The Employer and the Project Manager or their designated representatives shall be entitled to attend the aforesaid test and/or inspection, provided that the Employer shall bear all costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.
- 25.3 Whenever the Contractor is ready to carry out any such test and/or inspection, the Contractor shall give a reasonable advance notice of such test and/or inspection and of the place and time thereof to the Project Manager. The Contractor shall obtain from any relevant third Party or manufacturer any necessary permission or consent to enable the Employer and the Project Manager or their designated representatives to attend the test and/or inspection.
- 25.4 The Contractor shall provide the Project Manager with a certified report of the results of any such test and/or inspection.
- 25.5 If the Employer or Project Manager or their designated representatives fails to attend the test and/or inspection, or if it is agreed between the Parties that such persons shall not do so, then the Contractor may proceed with the test and/or inspection in the absence of such persons, and may provide the Project Manager with a certified report of the results thereof.
- 25.6 The Project Manager may require the Contractor to carry out any test and/or inspection not required by the Contract, provided that the Contractor's reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impede the progress of work on the Facilities and/or the Contractor's performance of its other obligations under the Contract, due allowance will be made in respect of the Time for Completion and the other obligations so affected.
- 25.7 If any component of the IT Products and/or Services fails to pass any test and/or inspection, the Contractor shall either rectify or replace such component and shall repeat the test and/or inspection upon giving a notice under GC Sub-Clause 25.3.
- 25.8 If any dispute shall arise between the parties in connection with or caused by an inspection and/or with regard to any component to be incorporated in the IT Products and/or Services that cannot be settled amicably between the parties within a reasonable period of time, either party may invoke the process pursuant to GC Clause 52 (Disputes and Arbitration), starting with referral of the matter to the Adjudicator in case an Adjudicator is included and named in the Contract.

26. Completion

- 26.1 As soon as the IT Products and Installation Services have, in the opinion of the Contractor, been delivered, Pre-commissioned, and made ready for Commissioning and Operational Acceptance Testing in accordance with the Schedule of Requirements, and the Agreed

and Finalized Project Plan, the Contractor shall so notify the Employer in writing.

- 26.2 The Project Manager shall, within fourteen (14) days after receipt of the Contractor's notice under GC Sub-Clause 26.1, either issue an Installation Certificate in the form specified in the Sample Forms Section in the Bidding Documents, stating that the Installation of the IT Products has been achieved by the date of the Contractor's notice under GC Clause 26.1, or notify the Contractor in writing of any defects and/or deficiencies, including, but not limited to, defects or deficiencies in the interoperability or integration of the various components making up the IT Products and Installation Services. The Contractor shall use all reasonable endeavors to promptly remedy any defect and/or deficiencies that have been notified to the Contractor by the Project Manager. The Contractor shall then promptly carry out retesting of the IT Products and Installation Services and, when in the Contractor's opinion they are ready for Commissioning and Operational Acceptance Testing, notify the Employer in writing, in accordance with GC Sub-Clause 26.1. The procedure set out in this Sub-Clause GC 26.2 shall be repeated, as necessary, until the Installation Certificate is issued.
- 26.3 If the Project Manager fails to issue the Installation Certificate and fails to inform the Contractor of any defects and/or deficiencies within fourteen (14) days after receipt of the Contractor's notice under GC Sub-Clause 26.1, or if the Employer puts the IT Products and Installation Services into production operation, then the IT Products and Installation Services shall be deemed to have achieved successful Installation as of the date of the Contractor's notice or repeated notice, or when the Employer put the IT Products and Installation Services into production operation, as the case may be.

27. Commissioning and Operational Acceptance

27.1 Commissioning

27.1.1 Commissioning of the IT Products and/or Services shall be commenced by the Contractor:

- (a) immediately after issue of the Installation Certificate is issued by the Project Manager, pursuant to GC Sub-Clause 26.2, or
- (b) as otherwise specified in the Technical Requirements (specified in the SOR) or the Agreed and Finalized Project Plan; or
- (c) immediately after Installation occurred, under GC Sub-Clause 26.3.

27.1.2 The Employer shall supply the operating and technical personnel and all materials and information reasonably required to enable the Contractor to carry out its obligations with respect to Commissioning. Production use of the IT Products and/or Services shall not commence prior to the start of the formal Operational Acceptance Testing.

27.2 Operational Acceptance Test

- 27.2.1 The Operational Acceptance Tests (and repeats of each tests) shall be the primary responsibility of the Employer (in accordance with GC Sub-Clause 10.10), but shall be conducted with the full cooperation of the Contractor during Commissioning of the IT Products and Installation Services to ascertain whether they conform to the SOR and meets the standard of performance quoted in the Contractor's bid, including, but not restricted to, the functional and technical performance requirements. The Operational Acceptance Tests during Commissioning will be conducted as specified in the SOR and/or the Agreed and Finalized Project Plan.
- 27.2.2 At the Employer's discretion, Operational Acceptance Tests may also be performed on replacement Products, upgrades and new version releases, and Products that are added or field-modified after Operational Acceptance of the System.
- 27.2.3 If for reason attributable to the Employer, the Operational Acceptance Test of the IT Products and Installation Services cannot be successfully completed within the period specified in the SOR, from the date of Installation or any other period agreed upon in writing by the Employer and the Contractor, the Contractor shall be deemed to have fulfilled its obligations with respect to the technical and functional aspects of the SOR and/or the Agreed and Finalized Project Plan, and GC Sub-Clauses 28.2 and 28.3 (Completion Time Guarantee) shall not apply.

27.3 Operational Acceptance

- 27.3.1 Subject to GC Sub-Clause 27.4 (Partial Acceptance) below, Operational Acceptance shall occur in respect of the IT Products and Installation Services when
- (a) the Operational Acceptance Tests, specified in the SOR and/or Agreed and Finalized Project Plan have been successfully completed; or
 - (b) the Operational Acceptance Tests have not been successfully completed or have not been carried out for reasons that are attributable to the Employer within the period from the date of Installation or any other agreed-upon period as specified in GC Clause 27.2.3 above; or
 - (c) the Employer has put the System into production or use for sixty (60) consecutive days. If the System is put into production or use in this manner, the Contractor shall notify the Employer and document such use.
- 27.3.2 At any time after any of the events set out in GC Sub-Clause 27.3.1 above have occurred, the Contractor may give a notice to the Project Manager requesting the issue of an Operational Acceptance Certificate.

27.3.3 After consultation with the Employer, and within fourteen (14) days after receipt of the Contractor's notice, the Project Manager shall:

- (a) issue an Operational Acceptance Certificate; or
- (b) notify the Contractor in writing of any defect or deficiencies or other reason for the failure of the Operational Acceptance Tests; or
- (c) issue the Operational Acceptance Certificate, if the situation covered by GC Clause 27.3.1 (b) arises.

27.3.4 The Contractor shall use all reasonable endeavors to promptly remedy any defect and/or deficiencies and/or other reasons for the failure of the Operational Acceptance Test that the Project Manager has notified to the Contractor. Once such remedies have been made by the Contractor, the Contractor shall notify the Employer, and the Employer, with the full cooperation of the Contractor, shall use all reasonable endeavors to promptly carry out retesting of the IT Products and Installation Services. Upon the successful conclusion of the Operational Acceptance Tests, the Contractor shall notify the Employer of its request for Operational Acceptance Certification, in accordance with GC Sub-Clause 27.3.2. The Employer shall then issue to the Contractor the Operational Acceptance Certification in accordance with GC Sub-Clause 27.3.3 (a), or shall notify the Contractor of further defects, deficiencies, or other reasons for the failure of the Operational Acceptance Test. The procedure set out in this GC Sub-Clause 27.3.4 shall be repeated, as necessary, until the Operational Acceptance Certificate is issued.

27.3.5 If the System or Subsystem fails to pass the Operational Acceptance Test(s) in accordance with GC Sub-Clause 27.2, then either:

- (a) the Employer may consider terminating the Contract, pursuant to GC Clause 47 (Termination for Contractor's Default), or
- (b) (ii) if the failure to achieve Operational Acceptance within the specified time period is a result of the failure of the Employer to fulfill its obligations under the Contract, then the Contractor shall be deemed to have fulfilled its obligations with respect to the relevant technical and functional aspects of the Contract, and GC Sub-Clauses 30.3 and 30.4 (Functional Guarantees) shall not apply.

27.3.6 If within fourteen (14) days after receipt of the Contractor's notice, the Project Manager fails to issue the Operational Acceptance Certificate or fails to inform the Contractor in writing of the justifiable reasons why the Project Manager has not issued the Operational Acceptance Certificate, the IT

Products and Installation Services shall be deemed to have been accepted as of the date of the Contractor's said notice.

27.4 Partial Acceptance

27.4.1 If so specified in the SOR for GC Sub-Clause 27.2(a), Installation and Commissioning shall be carried out individually for each identified major component of the IT Products and Installation Services. In this event, the provisions in the Contract relating to Installation and Commissioning, including the Operational Acceptance Test, shall apply to each such major component individually, and Operational Acceptance Certificate(s) shall be issued accordingly for each such major component, subject to the limitations contained in GC Sub-Clause 27.4.2.

27.4.2 The issuance of Operational Acceptance Certificates for individual major components pursuant to GC Sub-Clause 27.4.1 shall not relieve the Contractor of its obligation to obtain an Operational Acceptance Certificate for the IT Products and Installation Services as a whole once all major components have been supplied, installed, tested, and commissioned.

27.4.3 In the case of minor components for the IT Products and Installation Services that by their nature do not require Commissioning or an Operational Acceptance Test, the Project Manager shall issue an Operational Acceptance Certificate within fourteen (14) days after such components have been delivered and/or installed or the site works have been completed. The Contractor shall, however, use all reasonable endeavors to promptly remedy any defects or deficiencies in such minor components detected by the Employer or Contractor.

F. Guarantees and Liabilities

28. Completion Time Guarantee

28.1 The Contractor guarantees that it shall complete the supply, Installation, Commissioning, and achieve Operational Acceptance of the IT Products and/or Services within the time periods specified in the Implementation Schedule and/or Agreed and Finalized Project Plan pursuant to GC Sub-Clause 8.2, or within such extended time to which the Contractor shall be entitled under GC Clause 44 (Extension of Time for Completion).

28.2 If the Contractor fails to supply, install, commission, and achieve Operational Acceptance of the IT Products and/or Services within the time for achieving Operational Acceptance specified in the Implementation Schedule or the Agreed and Finalized Project Plan, or any extension of the time for achieving Operational Acceptance previously granted under GC Clause 44 (Extension of Time for Completion), the Contractor shall pay to the Employer liquidated damages at the rate specified in the PC as a percentage of the Contract Price, or the relevant part of the Contract Price if a major component of the IT Products and/or Services has not achieved Operational Acceptance. The aggregate amount of such liquidated damages shall in no event exceed the amount specified in the PC

("the Maximum"). Once the Maximum is reached, the Employer may consider termination of the Contract, pursuant to GC Sub-Clause 47 (Termination for Contractor's Default).

28.3 Unless otherwise specified in the PC, liquidated damages payable under GC Sub-Clause 28.2 shall apply only to the failure to achieve Operational Acceptance of the IT Products and/or Services as specified in the Implementation Schedule and/or Agreed and Finalized Project Plan. This GC Sub-Clause 28.3 shall not limit, however, any other rights or remedies the Employer may have under the Contract for other delays.

28.4 If liquidated damages are claimed by the Employer for the IT Products and/or Services, the Contractor shall have no further liability whatsoever to the Employer in respect to the Operational Acceptance time guarantee for the System (or Subsystem). However, the payment of liquidated damages shall not in any way relieve the Contractor from any of its obligations to complete the IT Products and/or Services or from any other of its obligations and liabilities under the Contract.

29. Defect Liability

29.1 The Contractor warrants that for the period specified in the SOR, all Products, including Documentation, and/or Services (to the extent relevant) to be delivered under this contract:

- (a) shall be free from defects in the design, engineering, and workmanship;
- (b) are newly manufactured, unused, and incorporate all recent material improvements in design; and
- (c) complies with or exceeds the Technical Specifications in the SOR.

Exceptions and/or limitations, if any, to this warranty with respect to Software (or categories of Software), shall be as specified in the PC. Commercial warranty provisions of products supplied under the Contract shall apply to the extent that they do not conflict with the provisions of this Contract.

29.2 In addition, the Contractor warrants that:

- (a) all Products components to be incorporated into the System form part of the Contractor's and/or Sub-Contractor's current product lines,
- (b) they have been previously released to the market, and
- (c) those specific items identified in the PC (if any) have been in the market for at least the minimum periods specified in the PC.

29.3 The Warranty Period shall commence from the date of Operational Acceptance of the IT Products and/or Services and shall extend for the length of time specified in the PC.

29.4 If during the Warranty Period any defect as described in GC Sub-Clause 29.1 should be found in the design, engineering, Documentation, and workmanship of the Products and/or Services

provided by the Contractor, the Contractor shall promptly, in consultation and agreement with the Employer regarding appropriate remedying of the defects, and at its sole cost, repair, replace, or otherwise make good (as the Contractor shall, at its discretion, determine) such defect as well as any damage to the Products and/or Services caused by such defect. Any defective Products and/or Services that have been replaced by the Contractor shall remain the property of the Contractor.

29.5 The Contractor shall not be responsible for the repair, replacement, or making good of any defect or of any damage to the Products and/or Services arising out of or resulting from any of the following causes:

- (a) improper operation or maintenance of the Product and/or Service by the Employer;
- (b) normal wear and tear;
- (c) use of the IT Products and/or Services with items not supplied by the Contractor, unless otherwise identified in the Schedule of Requirements, or approved by the Contractor; or
- (d) modifications made to the Products and/or Services by the Employer, or a third party, not approved by the Contractor.

29.6 The Contractor's obligations under this GC Clause 29 shall not apply to:

- (a) any materials that are normally consumed in operation or have a normal life shorter than the Warranty Period; or
- (b) any designs, specifications, or other data designed, supplied, or specified by or on behalf of the Employer or any matters for which the Contractor has disclaimed responsibility in writing and has been accepted by the Employer.

29.7 The Employer shall give the Contractor a notice promptly following the discovery of such defect, stating the nature of any such defect together with all available evidence.

29.8 The Contractor may, with the consent of the Employer, remove from the Site any IT Products and/or Services that are defective, if the nature of the defect, and/or any damage to the IT Products and/or Services caused by the defect, is such that repairs cannot be expeditiously carried out at the Site. If the repair, replacement, or making good is of such a character that it may affect the efficiency of the IT Products and/or Services, the Employer may give the Contractor notice requiring that tests of the defective part be made by the Contractor immediately upon completion of such remedial work, whereupon the Contractor shall carry out such tests.

29.9 If such part fails the tests, the Contractor shall carry out further repair, replacement, or making good (as the case may be) until that part of

the IT Product and/or Service passes such tests. The tests shall be agreed upon by the Employer and the Contractor.

- 29.10 If the Contractor fails to commence the work necessary to remedy such defect or any damage to the IT Product and/or Service caused by such defect within the time period specified in the PC, the Employer may, following notice to the Contractor, proceed to do such work or contract a third party (or parties) to do such work, and the reasonable costs incurred by the Employer in connection with such work shall be paid to the Employer by the Contractor or may be deducted by the Employer from any monies due the Contractor or claimed under the performance security (refer GC Sub-Clause 13.3 (Performance Security)).
- 29.11 If the IT Products and/or Services cannot be used by reason of such defect and/or making good of such defect, the Warranty Period for the IT Products and/or Services shall be extended by a period equal to the period during which the IT Products and/or Service could not be used by the Employer because of such defect and/or making good of such defect.
- 29.12 Items substituted for defective parts of the IT Product and/or Service during the Warranty Period shall be covered by the Defect Liability Period for the remainder of the Warranty Period applicable for the part replaced or three (3) months, whichever is greater.
- 29.13 At the request of the Employer and without prejudice to any other rights and remedies that the Employer may have against the Contractor under the Contract, the Contractor will offer all possible assistance to the Employer to seek warranty services or remedial action from any subcontracted third-party producers or licensor of IT Products and/or Services including without limitation assignment or transfer in favour of the Employer of the benefit of any warranties given by such producers or licensors to the Contractor.

30. Functional Guarantees

- 30.1 The Contractor guarantees that during the Operational Acceptance, the IT Products and/or Services and all parts thereof shall attain the Functional Guarantees, subject to and upon the conditions therein specified.
- 30.2 If, for reasons attributable to the Contractor, the minimum level of the Functional Guarantees are not met either in whole or in part, the Contractor shall at its cost and expense make such changes, modifications and/or additions to the IT Products and/or Services or any part thereof as may be necessary to meet at least the minimum level of such Guarantees. The Contractor shall notify the Employer upon completion of the necessary changes, modifications and/or additions, and shall request the Employer to repeat the Operational Acceptance Test until the minimum level of the Guarantees has been met. If the Contractor eventually fails to meet the minimum level of Functional Guarantees, the Employer may consider termination of the Contract, pursuant to GC Clause 47 (Termination for Contractor's Default).
- 30.3 If, for reasons attributable to the Contractor, the Functional Guarantees are not attained either in whole or in part, but the

minimum level of the Functional Guarantees is met, the Contractor shall, at the Contractor's option, either

- (a) make such changes, modifications and/or additions to the Facilities or any part thereof that are necessary to attain the Functional Guarantees at its cost and expense, and shall request the Employer to repeat the Operational Acceptance Test; or
- (b) pay liquidated damages to the Employer in respect of the failure to meet the Functional Guarantees.

30.4 The payment of liquidated damages under GC Sub-Clause 30.3, up to the limitation of liability specified in the Appendix to the Contract titled Functional Guarantees, shall completely satisfy the Contractor's guarantees under GC Sub-Clause 30.3, and the Contractor shall have no further liability whatsoever to the Employer in respect thereof. Upon the payment of such liquidated damages by the Contractor, the Project Manager shall issue the Operational Acceptance Certificate for the Facilities or any part thereof in respect of which the liquidated damages have been so paid.

31. Intellectual Property Rights Warranty

31.1 The Contractor hereby represents and warrants that:

- (a) the IT Products and/or Services as supplied, installed, tested and accepted;
- (b) use of the IT Products and/or Services in accordance with the Contract; and
- (c) copying of the Software and Documentation provided to the Employer in accordance with the Contract

do not and will not infringe any Intellectual Property Rights held by any third party and that it has all necessary rights or at its sole expense shall have secured in writing all transfers of rights and other consents necessary to make the assignments, licenses, and other transfers of Intellectual Property Rights and the warranties set forth in the Contract, and for the Employer to own or exercise all Intellectual Property Rights as provided in the Contract. Without limitation, the Contractor shall secure all necessary written agreements, consents, and transfers of rights from its employees and other persons or entities whose services are used for development of the IT Products and/or Services.

32. Intellectual Property Rights Indemnity

32.1 The Contractor shall indemnify and hold harmless the Employer and its employees and officers from and against any and all losses, liabilities, and costs (including losses, liabilities, and costs incurred in defending a claim alleging such a liability), that the Employer or its employees or officers may suffer as a result of any infringement or alleged infringement of any Intellectual Property Rights.

32.2 Such indemnity shall not cover any use of the IT Products and/or Services, including the Documentation, other than for the purpose indicated by or to be reasonably inferred from the Contract, any infringement resulting from the use of the IT Products and/or Services, or any secondary IT Products and/or Services that result

thereby in association or combination with any IT Products and/or Services not supplied by the Contractor, where the infringement arises because of such association or combination and not because of use of the IT Products and/or Services in its own right.

- 32.3 Such indemnities shall also not apply if any claim or infringement:
- (a) is asserted by a parent, subsidiary, or affiliate of the Employer's organization;
 - (b) is a direct result of a design mandated by the Employer's SOR and the possibility of such infringement was duly noted in the Contractor's bid; or
 - (c) results from the alteration of the IT Products and/or Services, including the Documentation, by the Employer or any persons other than the Contractor or a person authorized by the Contractor.
- 32.4 If a claim of infringement of Intellectual Property Rights is made or threatened by a third party, the Employer will allow the Contractor, at the Contractor's expense, to either:
- (a) obtain for the Employer the right to continued use of the IT Products and/or Services; or
 - (b) replace or modify the IT Products and/or Services so that the alleged infringement ceases so long as the IT Products and/or Services continue to provide the Customer with equivalent functionality and performance as required in the SOR.
- 32.5 The Employer shall indemnify and hold harmless the Contractor and its employees, officers and Sub-Contractors from and against any and all losses, liabilities, and costs incurred in defending a claim (alleging such a liability) that the Contractor or its employees, officers, or Sub-Contractors may suffer as a result of any infringement or alleged infringement of any Intellectual Property Rights arising out of or in connection with any design, data drawing, specification, or other documents or materials provided to the Contractor in connection with this Contract by the Employer or any persons (other than the Contractor) contracted by the Employer, except to the extent that such losses, liabilities, and costs arise as a result of the Contractor's breach of GC Sub-Clause 32.8.
- 32.6 Such indemnity shall not cover any use of the design, data, drawing, specification, or other documents or materials, other than for the purpose indicated by or to be reasonably inferred from the Contract, or any infringement resulting from the use of the design, data, drawing, specification, or other documents or materials, or any products produced thereby, in association or combination with any other IT Products and/or Services not provided by the Employer or any other person contracted by the Employer, where the infringement arises because of such association or combination and not because of the use of the design, data, drawing, specification, or other documents or materials in its own right.

- 32.7 Such indemnities shall also not apply:
- (a) if any claim of infringement is asserted by a parent, subsidiary, or affiliate of the Contractor's organization;
 - (b) to the extent that any claim of infringement caused by the alteration, by the Contractor, or any persons contracted by the Contractor, of the design, data, drawing, specification, or other documents or materials provided to the Contractor by the Employer or any persons contracted by the Employer.
- 32.8 If any proceedings are brought or any claim is made against the Contractor arising out of the matters referred to in GC Sub-Clause 32.5, the Contractor shall promptly give the Employer notice of such proceedings or claims, and the Employer may at its own expense and in the Contractor's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim. If the Employer fails to notify the Contractor within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Contractor shall be free to conduct the same on its own behalf. Unless the Employer has so failed to notify the Contractor within the twenty-eight (28) days, the Contractor shall made no admission that may be prejudicial to the defense of any such proceedings or claim. The Contractor shall, at the Employer's request, afford all available assistance to the Employer in conducting such proceedings or claim and shall re reimbursed by the Employer for all reasonable expenses incurred in so doing.

33. Limitation of Liability

- 33.1 Except in cases of criminal negligence or willful misconduct, and Intellectual Property Rights Indemnity claims pursuant to Clause 32:
- (a) neither Party shall be liable to the other Party, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, which may be suffered by the other Party in connection with the Contract, other than specifically provided as any obligation of the Party in the Contract, and
 - (b) the aggregate liability of the Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the amount resulting from the application of the multiplier specified in the PC, to the Contract Price or, if a multiplier is not so specified, the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the Contractor to indemnify the Employer with respect to patent infringement.

34. Criminal Charges and Convictions

- 34.1 The Contractor warrants that it has disclosed and will continue to disclose during the term of this Contract full details of all criminal convictions and all pending criminal charges against it or any of its personnel, associates or Sub-Contractors that would reasonably be expected to adversely affect the Contractor or the Contractor's capacity to fulfill its obligations under this Contract. The Contractor is not required to provide information to the Contractor in a form or in a manner which would cause the Contractor to breach the privacy of

the individual but the Contractor will take all reasonable steps to either:

- (a) provide sufficient information to enable the Employer to assess the level of any risk or conflict posed to it by the existence of such conviction or pending charge; or
- (b) take such steps as necessary to ensure that the person who is the subject of the conviction or pending charge ceases to be directly or indirectly involved with this Contract.

34.2 A failure to make any such disclosure will be treated as a material breach of this Contract.

G. Risk Distribution

35. Transfer of Ownership

35.1 With the exception of any Software and Documentation, the ownership of the IT Products and/or Services shall be transferred to the Employer at the time of Delivery or otherwise under terms that may be agreed upon and specified in the Contract.

35.2 Ownership and the terms of usage of any Software and Documentation supplied under the Contract shall be governed by GC Clause 15 (Intellectual Property and Copyright), and any elaboration in the SOR.

35.3 Ownership of the Contractor's Equipment used by the Contractor and its Sub-Contractors in connection with the Contract shall remain with the Contractor or its Sub-Contractors.

36. Care of IT Products and/or Services

36.1 The Contractor shall be responsible for the care and custody of the IT Products and/or Services or any part thereof until the date of Completion of the IT Products and/or Services pursuant to GC Clause 26 (Completion) or, where the Contract provides for Completion of the IT Products and/or Services in parts, until the date of Completion of the relevant part, and shall make good at its own cost any loss or damage that may occur to the IT Products and/or Services or the relevant part thereof from any cause whatsoever during such period. The Contractor shall also be responsible for any loss or damage to the IT Products and/or Services caused by the Contractor or its Sub-Contractors in the course of any work carried out, pursuant to GC Clause 29 (Defect Liability). Notwithstanding the foregoing, the Contractor shall not be liable for any loss or damage to the IT Products and/or Services or that part thereof caused by reason of any of the matters specified or referred to in paragraphs (a), (b) and (c) of GC Sub-Clauses 36.2 and 42.1 (War Risks).

36.2 If any loss or damage occurs to the IT Products and/or Services or any part thereof or to the Contractor's temporary IT Products and/or Services by reason of

- (a) insofar as they relate to the country where the Site is located, nuclear reaction, nuclear radiation, radioactive contamination, pressure wave caused by aircraft or other aerial objects, or any other occurrences that an experienced contractor could not reasonably foresee, or if reasonably foreseeable could not reasonably make provision for or insure against, insofar as such

risks are not normally insurable on the insurance market and are mentioned in the general exclusions of the policy of insurance, including War Risks and Political Risks, taken out under GC Clause 38 (Insurance) hereof; or

- (b) any use or occupation by the Employer or any third Party other than a Sub-Contractor, authorized by the Employer of any part of the IT Products and/or Services; or
- (c) any use of or reliance upon any design, data or specification provided or designated by or on behalf of the Employer, or any such matter for which the Contractor has disclaimed responsibility herein,

the Employer shall pay to the Contractor all sums payable in respect of the IT Products and/or Services executed, notwithstanding that the same be lost, destroyed or damaged, and will pay to the Contractor the replacement value of all temporary facilities and all parts thereof lost, destroyed or damaged. If the Employer requests the Contractor in writing to make good any loss or damage to the IT Products and/or Services thereby occasioned, the Contractor shall make good the same at the cost of the Employer in accordance with GC Clause 43 (Change in the Facilities). If the Employer does not request the Contractor in writing to make good any loss or damage to the IT Products and/or Services thereby occasioned, the Employer shall either request a change in accordance with GC Clause 43, excluding the performance of that part of the IT Products and/or Services thereby lost, destroyed or damaged, or, where the loss or damage affects a substantial part of the IT Products and/or Services, the Employer shall terminate the Contract pursuant to GC Sub-Clause 46.1 hereof.

- 36.3 The Contractor shall be liable for any loss of or damage to any Contractor's Equipment, or any other property of the Contractor used or intended to be used for purposes of the IT Products and/or Services, except
- (a) as mentioned in GC Sub-Clause 36.2 with respect to the Contractor's temporary IT Products and/or Services, and
 - (b) where such loss or damage arises by reason of any of the matters specified in GC Sub-Clauses 36.2 (b) and (c) and 42.1 (War Risks).
- 36.4 With respect to any loss or damage caused to the IT Products and/or Services or any part thereof or to the Contractor's Equipment by reason of any of the matters specified in GC Sub-Clause 42.1, the provisions of GC Sub-Clause 42.3 shall apply.

37. Loss of or Damage to Property; Accident or Injury to Workers; Indemnification

- 37.1 The Contractor and each and every Sub-Contractor shall abide by the job safety, insurance, customs, and immigration measures prevalent and laws in force in the Employer's Country.
- 37.2 Subject to GC Sub-Clause 37.3, the Contractor shall indemnify and hold harmless the Employer and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, in respect of the death

or injury of any person or loss of or damage to any property other than the IT Products and/or Services whether accepted or not, arising in connection with the supply and installation of the IT Products and/or Services and by reason of the negligence of the Contractor or its Sub-Contractors, or their employees, officers or agents, except any injury, death or property damage caused by the negligence of the Employer, its contractors, employees, officers or agents.

- 37.3 If any proceedings are brought or any claim is made against the Employer that might subject the Contractor to liability under GC Sub-Clause 37.2, the Employer shall promptly give the Contractor a notice thereof and the Contractor may at its own expense and in the Employer's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim. If the Contractor fails to notify the Employer within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Employer shall be free to conduct the same on its own behalf. Unless the Contractor has so failed to notify the Employer within the twenty-eight (28) day period, the Employer shall make no admission that may be prejudicial to the defense of any such proceedings or claim. The Employer shall, at the Contractor's request, afford all available assistance to the Contractor in conducting such proceedings or claim and shall be reimbursed by the Contractor for all reasonable expenses incurred in so doing.
- 37.4 The Employer shall indemnify and hold harmless the Contractor and its employees, officers and Sub-Contractors from any and all losses, liabilities, and costs (including losses, liabilities, and costs incurred in defending a claim alleging such a liability) that the Contractor or its employees, officers, or Sub-Contractors may suffer as a result of the death or personal injury of any person or loss of or damage to property of the Employer, other than the IT Products and/or Services not yet achieving Operational Acceptance, that is caused by fire, explosion, or any other perils, in excess of the amount recoverable from insurances procured under GC Clause 38 (Insurance), provided that such fire, explosion, or other perils were not caused by any act or failure of the Contractor.
- 37.5 If any proceedings are brought or any claim is made against the Contractor that might subject the Employer to liability under GC Sub-Clause 37.4, the Contractor shall promptly give the Employer notice of such proceedings or claims, and the Employer may at its own expense and in the Contractor's name conduct such proceedings or claim and any negotiations for the settlement of any such proceeding or claim. If the Employer fails to notify the Contractor within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Contractor shall be free to conduct the same on its own behalf. Unless the Employer has so failed to notify the Contractor within twenty-eight (28) days, the Contractor shall make no admission that may be prejudicial to the defense of any such proceedings or claim. The Contractor shall, at the Employer's request, afford all available assistance to the Employer in conducting such proceedings or claim and shall be reimbursed by the Employer for all reasonable expense incurred in so doing.

37.6 The Party entitled to the benefit of an indemnity under this GC Clause 37 shall take all reasonable measures to mitigate any loss or damage which has occurred. If the Party fails to take such measures, the other Party's liabilities shall be correspondingly reduced.

38. Insurance

38.1 To the extent specified in the Appendix to the Contract titled Insurance Requirements, the Contractor shall at its expense take out and maintain in effect, or cause to be taken out and maintained in effect, during the performance of the Contract, the insurances set forth below in the sums and with the deductibles and other conditions specified in the said Appendix. The identity of the insurers and the form of the policies shall be subject to the approval of the Employer, who should not unreasonably withhold such approval.

38.1.1 Cargo Insurance During Transport

As applicable, 110 percent of the price of the Products covering the Products at the Site from all risks of physical loss or damage (excluding only perils commonly excluded under "all risks" insurance policies of this type of reputable insurers) occurring prior to Operational Acceptance of the IT Products and/or Services.

38.1.2 Installation All Risks Insurance

Covering physical loss or damage to the IT Products and/or Services at the Site, occurring prior to Completion of the Facilities, with an extended maintenance coverage for the Contractor's liability in respect of any loss or damage occurring during the Defect Liability Period while the Contractor is on the Site for the purpose of performing its obligations during the Defect Liability Period.

38.1.3 Third Party Liability Insurance

Covering bodily injury or death suffered by third Parties including the Employer's personnel, and loss of or damage to property occurring in connection with the supply and installation of the IT Products and/or Services.

38.1.4 Automobile Liability Insurance

Covering use of all vehicles used by the Contractor or its Sub-Contractors, whether or not owned by them, in connection with the execution of the Contract.

38.1.5 Workers' Compensation

In accordance with the statutory requirements applicable in any country where the Contract or any part thereof is executed.

38.1.6 Employer's Liability

In accordance with the statutory requirements applicable in any country where the Contract or any part thereof is executed.

38.1.7 Other Insurances

Such other insurances as may be specifically agreed upon by the Parties hereto as listed in the Appendix to the Contract titled Insurance Requirements.

38.2 The Employer shall be named as co-insured under all insurance policies taken out by the Contractor pursuant to GC Sub-Clause 38.1,

except for the Third Party Liability, Workers' Compensation and Employer's Liability Insurances, and the Contractor's Sub-Contractors shall be named as co-insured under all insurance policies taken out by the Contractor pursuant to GC Sub-Clause 38.1 except for the Cargo Insurance During Transport, Workers' Compensation and Employer's Liability Insurances. All insurers' rights of subrogation against such co-insured for losses or claims arising out of the performance of the Contract shall be waived under such policies.

- 38.3 The Contractor shall, in accordance with the provisions of the Appendix to the Contract titled Insurance Requirements, deliver to the Employer certificates of insurance or copies of the insurance policies as evidence that the required policies are in full force and effect. The certificates shall provide that no less than twenty-one (21) days' notice shall be given to the Employer by insurers prior to cancellation or material modification of a policy.
- 38.4 The Contractor shall ensure that, where applicable, its Sub-Contractor(s) shall take out and maintain in effect adequate insurance policies for their personnel and vehicles and for work executed by them under the Contract, unless such Sub-Contractors are covered by the policies taken out by the Contractor.
- 38.5 The Employer shall at its expense take out and maintain in effect during the performance of the Contract those insurances specified in the Appendix to the Contract titled Insurance Requirements, in the sums and with the deductibles and other conditions specified in the said Appendix. The Contractor and the Contractor's Sub-Contractors shall be named as co-insured under all such policies. All insurers' rights of subrogation against such co-insured for losses or claims arising out of the performance of the Contract shall be waived under such policies. The Employer shall deliver to the Contractor satisfactory evidence that the required insurances are in full force and effect. The policies shall provide that not less than twenty-one (21) days' notice shall be given to the Contractor by all insurers prior to any cancellation or material modification of the policies. If so requested by the Contractor, the Employer shall provide copies of the policies taken out by the Employer under this GC Sub-Clause 38.5.
- 38.6 If the Contractor fails to take out and/or maintain in effect the insurances referred to in GC Sub-Clause 38.1, the Employer may take out and maintain in effect any such insurances and may from time to time deduct from any amount due the Contractor under the Contract any premium that the Employer shall have paid to the insurer, or may otherwise recover such amount as a debt due from the Contractor. If the Employer fails to take out and/or maintain in effect the insurances referred to in GC Sub-Clause 38.5, the Contractor may take out and maintain in effect any such insurances and may from time to time deduct from any amount due the Employer under the Contract any premium that the Contractor shall have paid to the insurer, or may otherwise recover such amount as a debt due from the Employer. If the Contractor fails to or is unable to take out and maintain in effect any such insurances, the Contractor shall nevertheless have no liability or responsibility towards the Employer, and the Contractor shall have full recourse against the Employer for any and all liabilities of the Employer herein.

39. Unforeseen Conditions

38.7 Unless otherwise provided in the Contract, the Contractor shall prepare and conduct all and any claims made under the policies effected by it pursuant to this GC Clause 38, and all monies payable by any insurers shall be paid to the Contractor. The Employer shall give to the Contractor all such reasonable assistance as may be required by the Contractor. With respect to insurance claims in which the Employer's interest is involved, the Contractor shall not give any release or make any compromise with the insurer without the prior written consent of the Employer. With respect to insurance claims in which the Contractor's interest is involved, the Employer shall not give any release or make any compromise with the insurer without the prior written consent of the Contractor.

39.1 If, during the execution of the Contract, the Contractor shall encounter on the Site any physical conditions other than climatic conditions, or artificial obstructions that could not have been reasonably foreseen prior to the date of the Contract by an experienced contractor on the basis of reasonable examination of the data relating to the IT Products and/or Services and on the basis of information that it could have obtained from a visual inspection of the Site if access thereto was available, or other data readily available to it relating to the IT Products and/or Services, and if the Contractor determines that it will in consequence of such conditions or obstructions incur additional cost and expense or require additional time to perform its obligations under the Contract that would not have been required if such physical conditions or artificial obstructions had not been encountered, the Contractor shall promptly, and before performing additional work or using additional Contractor's Equipment, notify the Project Manager in writing of:

- (a) the physical conditions or artificial obstructions on the Site that could not have been reasonably foreseen;
- (b) the additional work required, including the steps which the Contractor will or proposes to take to overcome such conditions or obstructions;
- (c) the extent of the anticipated delay; and
- (d) the additional cost and expense that the Contractor is likely to incur.

On receiving any notice from the Contractor under this GC Sub-Clause 39.1, the Project Manager shall promptly consult with the Employer and Contractor and decide upon the actions to be taken to overcome the physical conditions or artificial obstructions encountered. Following such consultations, the Project Manager shall instruct the Contractor, with a copy to the Employer, of the actions to be taken.

39.2 Any reasonable additional cost and expense incurred by the Contractor in following the instructions from the Project Manager to overcome such physical conditions or artificial obstructions referred to in GC Sub-Clause 39.1 shall be paid by the Employer to the Contractor as an addition to the Contract Price.

39.3 If the Contractor is delayed or impeded in the performance of the Contract because of any such physical conditions or artificial obstructions referred to in GC Sub-Clause 39.1, the Time for

Completion shall be extended in accordance with GC Clause 44 (Extension of Time for Completion).

40. Change in Laws and Regulations

40.1 If, after the date twenty-eight (28) days prior to the date of bid submission, in the country where the Site is located, any law, regulation, ordinance, order or by-law having the force of law is enacted, promulgated, abrogated or changed which shall be deemed to include any change in interpretation or application by the competent authorities, that subsequently affects the costs and expenses of the Contractor and/or the Time for Completion, the Contract Price shall be correspondingly increased or decreased, and/or the Time for Completion shall be reasonably adjusted to the extent that the Contractor has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced costs shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with the PC pursuant to GC Sub-Clause 11.2.

41. Force Majeure

41.1 "Force Majeure" shall mean any event beyond the reasonable control of the Employer or of the Contractor, as the case may be, and which is unavoidable notwithstanding the reasonable care of the Party affected, and shall include, without limitation, the following:

- (a) war, hostilities or warlike operations whether a state of war be declared or not, invasion, act of foreign enemy and civil war
- (b) rebellion, revolution, insurrection, mutiny, usurpation of civil or military government, conspiracy, riot, civil commotion and terrorist acts
- (c) confiscation, nationalization, mobilization, commandeering or requisition by or under the order of any government or de jure or de facto authority or ruler or any other act or failure to act of any local state or national government authority
- (d) strike, sabotage, lockout, embargo, import restriction, port congestion, lack of usual means of public transportation and communication, industrial dispute, shipwreck, shortage or restriction of power supply, epidemics, quarantine and plague
- (e) earthquake, landslide, volcanic activity, fire, flood or inundation, tidal wave, typhoon or cyclone, hurricane, storm, lightning, or other inclement weather condition, nuclear and pressure waves or other natural or physical disaster
- (f) shortage of labor, materials or utilities where caused by circumstances that are themselves Force Majeure.

41.2 If either Party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within fourteen (14) days after the occurrence of such event.

41.3 The Party who has given such notice shall be excused from the performance or punctual performance of its obligations under the

Contract for so long as the relevant event of Force Majeure continues and to the extent that such Party's performance is prevented, hindered or delayed. The Time for Completion shall be extended in accordance with GC Clause 8.

41.4 The Party or Parties affected by the event of Force Majeure shall use reasonable efforts to mitigate the effect thereof upon its or their performance of the Contract and to fulfill its or their obligations under the Contract, but without prejudice to either Party's right to terminate the Contract under GC Clauses 45 (Suspension), 46 (Termination for Employer's Convenience), 47 (Termination for Contractor's Default), and 48 (Termination by Contractor).

41.5 No delay or nonperformance by either Party hereto caused by the occurrence of any event of Force Majeure shall

- (a) constitute a default or breach of the Contract, or
- (b) give rise to any claim for damages or additional cost or expense occasioned thereby, subject to GC Sub-Clauses 36.2 (Care of IT Products and/or Services), 41.3, and 42.4 (War Risks)

if and to the extent that such delay or nonperformance is caused by the occurrence of an event of Force Majeure.

41.6 If the performance of the Contract is substantially prevented, hindered or delayed for a single period of more than sixty (60) days or an aggregate period of more than one hundred and twenty (120) days on account of one or more events of Force Majeure during the currency of the Contract, the Parties will attempt to develop a mutually satisfactory solution, failing which either Party may terminate the Contract by giving a notice to the other, but without prejudice to either Party's right to terminate the Contract under GC Sub-Clause 42.5 (War Risks).

41.7 In the event of termination pursuant to GC Sub-Clause 41.6, the rights and obligations of the Employer and the Contractor shall be as specified in GC Sub-Clauses 46.2 and 46.3.

41.8 Notwithstanding GC Sub-Clause 41.5, Force Majeure shall not apply to any obligation of the Employer to make payments to the Contractor herein.

42. War Risks

42.1 "War Risks" shall mean any event specified in paragraphs (a) and (b) of GC Sub-Clause 41.1 and any explosion or impact of any mine, bomb, shell, grenade or other projectile, missile, munitions or explosive of war, occurring or existing in or near the country (or countries) where the Site is located.

42.2 Notwithstanding anything contained in the Contract, the Contractor shall have no liability whatsoever for or with respect to

- (a) destruction of or damage to Facilities, or any part thereof;
- (b) destruction of or damage to property of the Employer or any third Party; or
- (c) injury or loss of life

if such destruction, damage, injury or loss of life is caused by any War Risks, and the Employer shall indemnify and hold the Contractor harmless from and against any and all claims, liabilities, actions, lawsuits, damages, costs, charges or expenses arising in consequence of or in connection with the same.

- 42.3 If the IT Products and/or Services or any other property of the Contractor used or intended to be used for the purposes of the IT Products and/or Services shall sustain destruction or damage by reason of any War Risks, the Employer shall pay the Contractor for
- (a) any part of the IT Products and/or Services so destroyed or damaged to the extent not already paid for by the Employer and so far as may be required by the Employer, and as may be necessary for completion of the Facilities;
 - (b) replacing or making good any Contractor's Equipment or other property of the Contractor so destroyed or damaged;
 - (c) replacing or making good any such destruction or damage to the IT Products and/or Services or any part thereof.

If the Employer does not require the Contractor to replace or make good any such destruction or damage to the IT Products and/or Services, the Employer shall either request a change in accordance with GC Clause 43, excluding the performance of that part of the IT Products and/or Services thereby destroyed or damaged or, where the loss, destruction or damage affects a substantial part of the IT Products and/or Services, shall terminate the Contract, pursuant to GC Clause 46.

If the Employer requires the Contractor to replace or make good on any such destruction or damage to the IT Products and/or Services, the Time for Completion shall be extended in accordance with GC 44.

- 42.4 Notwithstanding anything contained in the Contract, the Employer shall pay the Contractor for any increased costs or incidentals to the execution of the Contract that are in any way attributable to, consequent on, resulting from, or in any way connected with any War Risks, provided that the Contractor shall as soon as practicable notify the Employer in writing of any such increased cost.
- 42.5 If during the performance of the Contract any War Risks shall occur that financially or otherwise materially affect the execution of the Contract by the Contractor, the Contractor shall use its reasonable efforts to execute the Contract with due and proper consideration given to the safety of its and its Sub-Contractors' personnel engaged in the work on the Facilities, provided, however, that if the execution of the work on the Facilities becomes impossible or is substantially prevented for a single period of more than sixty (60) days or an aggregate period of more than one hundred and twenty (120) days on account of any War Risks, the Parties will attempt to develop a mutually satisfactory solution, failing which either Party may terminate the Contract by giving a notice to the other.
- 42.6 In the event of termination pursuant to GC Sub-Clauses 42.3 or 42.5, the rights and obligations of the Employer and the Contractor shall be

specified in GC Sub-Clauses 26.2 and 46.3 (Termination for Employer's Convenience).

H. Change in Contract Elements

43. Change in the Facilities

43.1 Introducing a Change

43.1.1 Either Party may seek to vary any obligation of the Contract by making application to the other Party. No amendment or other variation of the Contract shall be effective unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party to the Contract.

43.1.2 Subject to GC Sub-Clauses 43.2.5 and 43.2.7, the Employer shall have the right to propose, and subsequently require, that the Project Manager order the Contractor from time to time during the performance of the Contract to make any change, modification, addition or deletion to, in or from the SOR (interchangeably called "Change"), provided that such Change falls within the general scope of the SOR and does not constitute unrelated work and that it is technically practicable, taking into account both the state of advancement of the work against the Agreed and Finalized Project Plan and the technical compatibility of the Change envisaged with the nature of the SOR as originally specified in the Contract.

A Change may involve, but is not restricted to, the substitution of updated IT Products and/or Services and related Services in accordance with GC Clause 23 (Product Upgrades).

43.1.3 The Contractor may from time to time during its performance of the Contract propose to the Employer (with a copy to the Project Manager), any Change that the Contractor considers necessary or desirable to improve the quality or efficiency. The Employer may at its discretion approve or reject any Change proposed by the Contractor.

43.1.4 Notwithstanding GC Sub-Clauses 43.1.2 and 43.1.3, no change made necessary because of any default of the Contractor in the performance of its obligations under the Contract shall be deemed to be a Change, and such change shall not result in any adjustment of the Contract Price or the Time for Operational Acceptance.

43.1.5 The procedure on how to proceed with and execute Changes is specified in GC Sub-Clauses 43.2 and 43.3 (Changes Originating from Employer and Contractor) and further details and forms are provided in the Sample Forms Section in the Bidding Documents.

43.1.6 Moreover, the Employer and Contractor will agree, during development of the Agreed and Finalized Project Plan, to a date prior to the scheduled date for Operational Acceptance after which the SOR shall be "frozen." Any Change initiated after this time will be dealt with after Operational Acceptance.

43.2 Changes Originating from Employer

43.2.1 If the Employer proposes a Change pursuant to GC Sub-Clause 43.1.2, it shall send to the Contractor a "Request for Change Proposal," requiring the Contractor to prepare and furnish to the Project Manager as soon as reasonably practicable a "Change Proposal," which shall include the following:

- (a) brief description of the Change;
- (b) impact on the Time for Operational Acceptance;
- (c) detailed estimated cost of the Change;
- (d) effect on Functional Guarantees (if any);
- (e) effect on any other provisions of the Contract.

43.2.2 Prior to preparing and submitting the "Change Proposal," the Contractor shall submit to the Project Manager a "Change Estimate Proposal," which shall be an estimate of the cost of preparing and submitting the Change Proposal, plus a first approximation of the suggested approach and cost for implementing the changes. Upon receipt of the Contractor's Change Estimate Proposal, the Employer shall do one of the following:

- (a) accept the Contractor's estimate with instructions to the Contractor to proceed with the preparation of the Change Proposal;
- (b) advise the Contractor of any part of its Change Estimate Proposal that is unacceptable and request the Contractor to review its estimate;
- (c) advise the Contractor that the Employer does not intend to proceed with the Change.

43.2.3 Upon receipt of the Employer's instruction to proceed under GC Sub-Clause 43.2.2 (a), the Contractor shall, with proper expedition, proceed with the preparation of the Change Proposal, in accordance with GC Sub-Clause 43.2.1. The Contractor, at its discretion, may specify a validity period for the Change Proposal, after which if the Employer and Contractor have not reached agreement in accordance with GC Sub-Clause 43.2.6, then GC Sub-Clause 43.2.7 shall apply.

43.2.4 The pricing of any Change shall, as far as practicable, be calculated in accordance with the rates and prices included in the Contract. If the nature of the Change is such that the Contract rates and prices are inequitable, the parties to the Contract shall agree on other specific rates to be used for valuing the Change.

43.2.5 If before or during the preparation of the Change Proposal it becomes apparent that the aggregate effect of compliance with the Request for Change Proposal and with all other Change Orders that have already become binding upon the Contractor

under this GC Clause would be to increase or decrease the Contract Price as originally set forth in Article 2 (Contract Price) of the Contract by more than the percentage stated in the ITB Clause 42, the Contractor may give a written notice of objection to this Request for Change Proposal prior to furnishing the Change Proposal. If the Employer accepts the Contractor's objection, the Employer shall withdraw the proposed Change and shall notify the Contractor in writing of its acceptance.

The Contractor's failure to so object to a Request for Change Proposal shall neither affect its right to object to any subsequent requested Changes or Change Orders herein, nor affect its right to take into account, when making such subsequent objection, the percentage increase or decrease in the Contract Price that any Change not objected to by the Contractor represents.

- 43.2.6 Upon receipt of the Change Proposal, the Employer and the Contractor shall mutually agree upon all matters contained in the Change Proposal. Within fourteen (14) days after such agreement, the Employer shall, if it intends to proceed with the Change, issue the Contractor a Change Order. If the Employer is unable to reach a decision within fourteen (14) days, it shall notify the Contractor with details of when the Contractor can expect a decision.

If the Employer decides not to proceed with the Change for whatever reason, it shall, within the said period of fourteen (14) days, notify the Contractor accordingly. Under such circumstances, the Contractor shall be entitled to reimbursement of all costs reasonably incurred by it in the preparation of the Change Proposal, provided that these do not exceed the amount given by the Contractor in its Change Estimate Proposal submitted in accordance with GC Sub-Clause 43.2.2.

- 43.2.7 If the Employer and the Contractor cannot reach agreement on the price for the Change, an equitable adjustment to the Time for Operational Acceptance, or any other matters identified in the Change Proposal, the change will not be implemented. However, this provision does not limit the rights of either party under GC Clause 52 (Disputes and Arbitration).

43.3 Changes Originating from Contractor

- 43.3.1 If the Contractor proposes a Change pursuant to GC Sub-Clause 43.1.3, the Contractor shall submit to the Project Manager a written "Application for Change Proposal," giving reasons for the proposed Change and including the information specified in GC Sub-Clause 43.2.1. Upon receipt of the Application for Change Proposal, the Parties shall follow the procedures outlined in GC Clauses 43.2.6 and 43.2.7 except that the words "Change Proposal" shall be read, for the purposes of this GC Sub-Clause 43.3 as "Application for Change Proposal." However, should the Employer choose not to proceed or the Employer and the Contractor cannot come to agreement on the change during any validity period that the Contractor may specify in its Application for Change Proposal, the Contractor shall not be entitled to recover the costs of

preparing the Application for Change Proposal, unless subject to an agreement between the Employer and the Contractor to the contrary.

44. Extension of Time for Completion

44.1 The Time(s) for Completion specified in the PC pursuant to GC Sub-Clause 8.2 shall be extended if the Contractor is delayed or impeded in the performance of any of its obligations under the Contract by reason of any of the following:

- (a) any Change in the SOR as provided in GC Clause 43;
- (b) any occurrence of Force Majeure as provided in GC Clause 41, unforeseen conditions as provided in GC Clause 39, or other occurrence of any of the matters specified or referred to in paragraphs (a), (b), and (c) of GC Sub-Clause 36.2;
- (c) any suspension order given by the Employer under GC Clause 45 hereof or reduction in the rate of progress pursuant to GC Sub-Clause 45.2; or
- (d) any changes in laws and regulations as provided in GC Clause 40; or
- (e) any default or breach of the Contract by the Employer, or any activity, act or omission of the Employer, or the Project Manager, or any other contractors employed by the Employer; or
- (f) any delay on the part of a sub-contractor, provided such delay is due to a cause for which the Contractor himself would have been entitled to an extension of time under this sub-clause; or
- (g) delays attributable to the Employer or caused by customs; or
- (h) any other matter specifically mentioned in the Contract

by such period as shall be fair and reasonable in all the circumstances and as shall fairly reflect the delay or impediment sustained by the Contractor.

44.2 Except where otherwise specifically provided in the Contract, the Contractor shall submit to the Project Manager a notice of a claim for an extension of the Time for Completion, together with particulars of the event or circumstance justifying such extension as soon as reasonably practicable after the commencement of such event or circumstance. As soon as reasonably practicable after receipt of such notice and supporting particulars of the claim, the Employer and the Contractor shall agree upon the period of such extension. In the event that the Contractor does not accept the Employer's estimate of a fair and reasonable time extension, the Contractor shall be entitled to refer the matter to an Arbitrator, pursuant to GC Sub-Clause 52.1.

44.3 The Contractor shall at all times use its reasonable efforts to minimize any delay in the performance of its obligations under the Contract.

44.4 In all cases where the Contractor has given a notice of a claim for an extension of time under GC 44.2, the Contractor shall consult with the Project Manager in order to determine the steps (if any) which can be

taken to overcome or minimize the actual or anticipated delay. The Contractor shall there after comply with all reasonable instructions which the Project Manager shall give in order to minimize such delay. If compliance with such instructions shall cause the Contractor to incur extra costs and the Contractor is entitled to an extension of time under GC 44.1, the amount of such extra costs shall be added to the Contract Price.

45. Suspension

45.1 The Employer may request the Project Manager, by notice to the Contractor, to suspend performance of any or all of its obligations under the Contract. Such notice shall specify the obligation of which performance is to be suspended, the effective date of the suspension and the reasons therefore. The Contractor shall thereupon suspend performance of such obligation, except those obligations necessary for the care or preservation of the Facilities, until ordered in writing to resume such performance by the Project Manager.

If, by virtue of a suspension order given by the Project Manager, other than by reason of the Contractor's default or breach of the Contract, the Contractor's performance of any of its obligations is suspended for an aggregate period of more than ninety (90) days, then at any time thereafter and provided that at that time such performance is still suspended, the Contractor may give a notice to the Project Manager requiring that the Employer shall, within twenty-eight (28) days of receipt of the notice, order the resumption of such performance or request and subsequently order a change in accordance with GC Clause 43 (Change in the Facilities), excluding the performance of the suspended obligations from the Contract.

If the Employer fails to do so within such period, the Contractor may, by a further notice to the Project Manager, elect to treat the suspension, where it affects a part only of the Facilities, as a deletion of such part in accordance with GC Clause 43 or, where it affects the whole of the Facilities, as termination of the Contract under GC Clause 46 (Termination for Employer's Convenience).

45.2 If

- (a) the Employer has failed to pay the Contractor any sum due under the Contract within the specified period, has failed to approve any invoice or supporting documents without just cause pursuant to the Appendix to the Contract titled Terms and Procedures of Payment, or commits a substantial breach of the Contract, the Contractor may give a notice to the Employer that requires payment of such sum, with interest thereon as stipulated in GC Sub-Clause 12.3, requires approval of such invoice or supporting documents, or specifies the breach and requires the Employer to remedy the same, as the case may be. If the Employer fails to pay such sum together with such interest, fails to approve such invoice or supporting documents or give its reasons for withholding such approval, or fails to remedy the breach or take steps to remedy the breach within fourteen (14) days after receipt of the Contractor's notice or
- (b) the Contractor is unable to carry out any of its obligations under the Contract for any reason attributable to the Employer, including but not limited to the Employer's failure to provide

possession of or access to the Site or other areas in accordance with GC Sub-Clause 10.2 (Employer's Responsibilities), or failure to obtain any governmental permit necessary for the execution and/or completion of the Facilities,

then the Contractor may by fourteen (14) days' notice to the Employer suspend performance of all or any of its obligations under the Contract, or reduce the rate of progress.

45.3 If the Contractor's performance of its obligations is suspended or the rate of progress is reduced pursuant to this GC Clause 45, then the Time for Completion shall be extended in accordance with GC Sub-Clause 44.1 (Extension of Time for Completion), and any and all additional costs or expenses incurred by the Contractor as a result of such suspension or reduction shall be paid by the Employer to the Contractor in addition to the Contract Price, except in the case of suspension order or reduction in the rate of progress by reason of the Contractor's default or breach of the Contract.

45.4 During the period of suspension, the Contractor shall not remove from the Site any IT Products and/or Services or part thereof, or any Contractor's Equipment, without the prior written consent of the Employer.

46. Termination for Employer's Convenience

46.1 The Employer may at any time terminate the Contract for any reason by giving the Contractor a notice of termination that refers to this GC Clause 46.

46.2 Upon receipt of the notice of termination under GC Sub-Clause 46.1, the Contractor shall either as soon as practical or upon the date specified in the notice of termination:

- (a) cease all further work, except for such work as the Employer may specify in the notice of termination for the sole purpose of protecting that part of the SOR already executed, or any work required to leave the Site in a clean and safe condition;
- (b) terminate all subcontracts, except those to be assigned to the Employer pursuant to GC Sub-Clause 46.2(d)(ii) below;
- (c) remove all Contractor's Equipment from the Site, repatriate the Contractor's and its Sub-Contractors' personnel from the Site, remove from the Site any wreckage, rubbish and debris of any kind; and
- (d) subject to the payment specified in GC Sub-Clause 46.3, shall:
 - (i) deliver to the Employer the parts of the SOR executed by the Contractor up to the date of termination;
 - (ii) to the extent legally possible, assign to the Employer all right, title and benefit of the Contractor to the IT Products and/or Services, as of the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Contractor and its Sub-Contractors; and

- (iii) deliver to the Employer all non-proprietary drawings, specifications and other documents prepared by the Contractor or its Sub-Contractors as of the date of termination in connection with the IT Products and/or Services.

46.3 In the event of termination of the Contract under GC Sub-Clause 46.1, the Employer shall pay to the Contractor the following amounts:

- (a) the Contract Price, properly attributable to part or whole of the IT Products and/or Services executed by the Contractor as of the date of termination;
- (b) the costs reasonably incurred by the Contractor in the removal of the Contractor's Equipment from the Site and in the repatriation of the Contractor's and its Sub-Contractors' personnel;
- (c) any amounts to be paid by the Contractor to its Sub-Contractors in connection with the termination of any subcontracts, including any cancellation charges;
- (d) costs incurred by the Contractor in protecting the IT Products and/or Services and leaving the Site in a clean and safe condition pursuant to GC Sub-Clause 47.1 (Termination for Contractor's Default); and
- (e) the cost of satisfying all other obligations, commitments and claims that the Contractor may in good faith have undertaken with third Parties in connection with the Contract and that are not covered by GC Sub-Clauses 46.3(a) through (d) above.

47. Termination for Contractor's Default

47.1 The Employer, without prejudice to any other rights or remedies it may possess, may terminate the Contract forthwith in the following circumstances by giving a notice of termination and its reasons therefore to the Contractor, referring to this GC Sub-Clause 47.1:

- (a) if the Contractor becomes bankrupt or insolvent, has a receiving order issued against it, compounds with its creditors, or, if the Contractor is a corporation, a resolution is passed or order is made for its winding up, (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), a receiver is appointed over any part of its undertaking or assets, or if the Contractor takes or suffers any other analogous action in consequence of debt;
- (b) if the Contractor assigns or transfers the Contract or any right or interest therein in violation of the provision of GC Clause 49 (Assignment); or
- (c) if the Contractor, in the judgment of the Employer has engaged in corrupt, fraudulent, coercive or collusive practices in competing for or in executing the Contract, including but not limited to willful misrepresentation of facts concerning ownership of Intellectual Property Rights in, or proper authorization and/or licenses from the owner to offer the hardware, software, or materials provided under the Contract.

47.2 If the Contractor

- (a) has abandoned or repudiated the Contract;
- (b) has without valid reason failed to commence work on the IT Products and/or Services promptly;
- (c) persistently fails to execute the Contract in accordance with the Contract or persistently neglects to carry out its obligations under the Contract without just cause;
- (d) refuses or is unable to provide sufficient Documentation, Services, or labor to execute and complete the IT Products and/or Services in the manner specified in the Agreed and Finalized Project Plan furnished under GC Clause 19 at rates of progress that give reasonable assurance to the Employer that the Contractor can attain Operational Acceptance of the IT Products and/or Services by the Time for Operational Acceptance as extended;

then the Employer may, without prejudice to any other rights it may possess under the Contract, give a notice to the Contractor stating the nature of the default and requiring the Contractor to remedy the same. If the Contractor fails to remedy or to take steps to remedy the same within fourteen (14) days of its receipt of such notice, then the Employer may terminate the Contract forthwith by giving a notice of termination to the Contractor that refers to this GC Sub-Clause 47.2.

47.3 Upon receipt of the notice of termination under GC Sub-Clauses 47.1 or 47.2, the Contractor shall, either immediately or upon such date as is specified in the notice of termination,

- (a) cease all further work, except for such work as the Employer may specify in the notice of termination for the sole purpose of protecting that part of the IT Products and/or services already executed, or any work required to leave the Site in a clean and safe condition;
- (b) terminate all subcontracts, except those to be assigned to the Employer pursuant to GC Sub-Clause 47.3(d) below;
- (c) deliver to the Employer the parts of the IT Products and/or Services executed by the Contractor up to the date of termination;
- (d) to the extent legally possible, assign to the Employer all rights, title and benefit of the Contractor to the IT Products and/or Services or Subsystems as of the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Contractor and its Sub-Contractors;
- (e) deliver to the Employer all drawings, specifications, and other documents prepared by the Contractor or its Sub-Contractors as of the date of termination in connection with the Products and/or Services.

- 47.4 The Employer may enter upon the Site, expel the Contractor, and complete the Products and/or Services itself or by employing any third Party. Upon completion of the Products and/or Services or at such earlier date as the Employer thinks appropriate, the Employer shall give notice to the Contractor that such Contractor's Equipment will be returned to the Contractor at or near the Site and shall return such Contractor's Equipment to the Contractor in accordance with such notice. The Contractor shall thereafter without delay and at its cost remove or arrange removal of the same from the Site.
- 47.5 Subject to GC Sub-Clause 47.6, the Contractor shall be entitled to be paid the Contract Price attributable to the portion of the IT Products and/or Services executed as of the date of termination, and the costs, if any, incurred in protecting the IT Products and/or Services and in leaving the Site in a clean and safe condition pursuant to GC Sub-Clause 47.3. Any sums due the Employer from the Contractor accruing prior to the date of termination shall be deducted from the amount to be paid to the Contractor under this Contract.
- 47.6 If the Employer completes the IT Products and/or Services, the cost of completing the IT Products and/or Services by the Employer shall be determined.

If the sum that the Contractor is entitled to be paid, pursuant to GC Sub-Clause 47.5, plus the reasonable costs incurred by the Employer in completing the IT Products and/or Services, exceeds the Contract Price, the Contractor shall be liable for such excess.

If such excess is greater than the sums due the Contractor under GC Sub-Clause 47.5, the Contractor shall pay the balance to the Employer, and if such excess is less than the sums due the Contractor under GC Sub-Clause 47.5, the Employer shall pay the balance to the Contractor. The Employer and the Contractor shall agree, in writing, on the computation described above and the manner in which any sums shall be paid.

48. Termination by Contractor

- 48.1 If
- (a) the Employer has failed to pay the Contractor any sum due under the Contract within the specified period, has failed to approve any invoice or supporting documents without just cause pursuant to the Appendix to the Contract titled Terms and Procedures of Payment, or commits a substantial breach of the Contract, the Contractor may give a notice to the Employer that requires payment of such sum, with interest thereon as stipulated in GC Sub-Clause 12.3, requires approval of such invoice or supporting documents, or specifies the breach and requires the Employer to remedy the same, as the case may be. If the Employer fails to pay such sum together with such interest, fails to approve such invoice or supporting documents or give its reasons for withholding such approval, fails to remedy the breach or take steps to remedy the breach within fourteen (14) days after receipt of the Contractor's notice, or
 - (b) the Contractor is unable to carry out any of its obligations under the Contract for any reason attributable to the Employer, including but not limited to the Employer's failure to provide

possession of or access to the Site or other areas or failure to obtain any governmental permit necessary for the execution and/or completion of the IT Products and/or Services;

then the Contractor may give a notice to the Employer of such events, and if the Employer has failed to pay the outstanding sum, to approve the invoice or supporting documents, to give its reasons for withholding such approval, or to remedy the breach within twenty-eight (28) days of such notice, or if the Contractor is still unable to carry out any of its obligations under the Contract for any reason attributable to the Employer within twenty-eight (28) days of the said notice, the Contractor may by a further notice to the Employer referring to this GC Sub-Clause 48.1(b), forthwith terminate the Contract.

- 48.2 The Contractor may terminate the Contract forthwith by giving a notice to the Employer to that effect, referring to this GC Sub-Clause 48.2, if the Employer becomes bankrupt or insolvent, has a receiving order issued against it, compounds with its creditors, or, being a corporation, if a resolution is passed or order is made for its winding up (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), a receiver is appointed over any part of its undertaking or assets, or if the Employer takes or suffers any other analogous action in consequence of debt.
- 48.3 If the Contract is terminated under GC Sub-Clauses 48.1(b) or 48.2, then the Contractor shall immediately:
- (a) cease all further work, except for such work as may be necessary for the purpose of protecting that part of the IT Products and/or Services already executed, or any work required to leave the Site in a clean and safe condition;
 - (b) terminate all subcontracts, except those to be assigned to the Employer pursuant to GC Sub-Clause 48.3(d)(ii);
 - (c) remove all Contractor's Equipment from the Site and repatriate the Contractor's and its Sub-Contractors' personnel from the Site; and
 - (d) subject to the payment specified in GC Sub-Clause 48.4, shall:
 - (i) deliver to the Employer the parts of the IT Products and/or Services executed by the Contractor up to the date of termination;
 - (ii) to the extent legally possible, assign to the Employer all rights, title and benefit of the Contractor to the IT Products and/or Services, or Subsystems as of the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Contractor and its Sub-Contractors, and
 - (iii) to the extent legally possible, deliver to the Employer all drawings, specifications, and other documents prepared by the Contractor or its Sub-Contractors as of the date of

termination in connection with the IT Products and/or Services.

- 48.4 If the Contract is terminated under GC Sub-Clauses 48.1 or 48.2, the Employer shall pay to the Contractor all payments specified in GC Sub-Clause 46.3, and reasonable compensation for all loss, except for loss of profit, or damage sustained by the Contractor arising out of, in connection with, or in consequence of such termination.
- 48.5 Termination by the Contractor pursuant to this GC Clause 48 is without prejudice to any other rights or remedies of the Contractor that may be exercised in lieu of or in addition to rights conferred by GC Clause 48.
- 48.6 In GC Clauses 46 to 48, the expression “portion of the IT Products and/or Services executed” shall include all work executed, Services provided, and all IT Products and/or Services, acquired (or subject to a legally binding obligation to purchase) by the Contractor and used or intended to be used for the purpose of the Contractor and used or intended to be used for the purpose of the IT Products and/or Services, up to and including the date of termination.
- 48.7 In GC Clauses 46 to 48, in calculating any monies due from the Employer to the Contractor, account shall be taken of any sum previously paid by the Employer to the Contractor under the Contract, including any advance payment paid pursuant to the Appendix to the Contract titled Terms and Procedures of Payment.

49. Assignment

- 49.1 Neither the Employer nor the Contractor shall, without the express prior written consent of the other Party, which consent shall not be unreasonably withheld, assign to any third Party the Contract or any part thereof, or any right, benefit, obligation or interest therein or thereunder, except that the Contractor shall be entitled to assign either absolutely or by way of charge any monies due and payable to it or that may become due and payable to it under the Contract.

50. Export Restrictions

- 50.1 Notwithstanding any obligation under the Contract to complete all export formalities, any export restrictions attributable to the Employer, to the country of the Employer or to the use of the IT Products and/or Services to be supplied which arise from trade regulations from a country supplying those IT Products and/or Services, and which substantially impede the Contractor from meeting its obligations under the Contract, shall release the Contractor from the obligation to provide deliveries or services, always provided, however, that the Contractor can demonstrate to the satisfaction of the Employer and of ADB that it has completed all formalities in a timely manner, including applying for permits, authorizations, and licenses necessary for the export of the IT Products and/or Services under the terms of the Contract. Termination of the Contract on this basis shall be for the Employer’s convenience pursuant to GC Clause 46.

I. Claims, Disputes and Arbitration

51. Contractor’s Claims

- 51.1 If the Contractor considers himself to be entitled to any extension of the Time for Completion and/or any additional payment, under any clause of these General Conditions or otherwise in connection with the Contract, the Contractor shall submit a notice to the Project Manager,

describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than twenty-eight (28) days after the Contractor became aware, or should have become aware, of the event or circumstance.

51.2 If the Contractor fails to give notice of a claim within such period of twenty-eight (28) days, the Time for Completion shall not be extended, the Contractor shall not be entitled to additional payment, and the Employer shall be discharged from all liability in connection with the claim. Otherwise, the following provisions of this Sub-Clause shall apply.

- (a) The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all as relevant to such event or circumstance.
- (b) The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at another location acceptable to the Project Manager. Without admitting the Employer's liability, the Project Manager may, after receiving any notice under this Sub-Clause, monitor the record-keeping and/or instruct the Contractor to keep further contemporary records. The Contractor shall permit the Project Manager to inspect all these records, and shall (if instructed) submit copies to the Project Manager.
- (c) Within forty-two (42) days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Project Manager, the Contractor shall send to the Project Manager a fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/or additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:
 - (i) this fully detailed claim shall be considered as interim;
 - (ii) the Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/or amount claimed, and such further particulars as the Project Manager may reasonably require; and
 - (iii) the Contractor shall send a final claim within twenty-eight (28) days after the end of the effects resulting from the event or circumstance, or within such other period as may be proposed by the Contractor and approved by the Project Manager.
- (d) Within forty-two (42) days after receiving a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Project Manager and approved by the Contractor, the Project Manager shall respond with approval, or with disapproval and detailed comments. The Project Manager may also request any necessary further

particulars, but shall nevertheless give his/her response on the principles of the claim within such time.

- (e) Each payment certificate shall include such amounts for any claim as have been reasonably substantiated as due under the relevant provision of the Contract. Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only be entitled to payment for such part of the claim as he has been able to substantiate.
- (f) The Project Manager shall agree with the Contractor or estimate:
 - (i) the extension (if any) of the Time for Completion (before or after its expiry) in accordance with GC Clause 44 (Extension of time for Completion), and/or
 - (ii) the additional payment (if any) to which the Contractor is entitled under the Contract.
- (g) The requirements of this Sub-Clause are in addition to those of any other Sub-Clause which may apply to a claim. If the Contractor fails to comply with this or another Sub-Clause in relation to any claim, any extension of time and/or additional payment shall take account of the extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Sub-Clause.
- (h) In the event that the Contractor and the Employer cannot agree on any matter relating to a claim, either Party may refer the matter to the Disputes and Arbitration procedures pursuant to GC Clause 52 hereof.

52. Disputes and Arbitration

52.1 Adjudication

- (a) The parties, within fourteen (14) days of the Effective Date, will agree and appoint an Adjudicator.
- (b) If any dispute of any kind whatsoever shall arise between the Employer and the Contractor in connection with or arising out of the Contract, including without prejudice to the generality of the foregoing, any question regarding its existence, validity or termination, or the operation of the IT Products and/or Services (whether during the progress of implementation or after its achieving Operational Acceptance and whether before or after the termination, abandonment, or breach of the Contract), the Parties shall seek to resolve any such dispute or difference by mutual consultation. If the Parties fail to resolve such a dispute or difference by mutual consultation, within fourteen (14) days after one Party has notified the other in writing of the dispute or difference, then, if the Contract in Appendix includes and names an Adjudicator, the dispute shall be referred in writing by either Party to the Adjudicator, with a copy to the other Party. If there is no Adjudicator specified in the Contract, the mutual consultation period stated above shall last twenty-eight (28) days (instead of 14), upon expiry of which either Party may move to the notification of arbitration pursuant to GC Sub-Clause 52.2(a).

- (c) The Adjudicator shall give his or her decision in writing to both Parties within twenty-eight (28) days of a dispute being referred to the Adjudicator. If the Adjudicator has done so, and no notice of intention to commence arbitration has been given by either the Employer or the Contractor within fifty-six (56) days of such reference, the decision shall become final and binding upon the Employer and the Contractor. Any decision that has become final and binding shall be implemented by the Parties forthwith.
- (d) The Adjudicator shall be paid an hourly fee at the rate specified in Appendix 2 (Adjudicator) to the Contract, plus reasonable expenditures incurred in the execution of duties as Adjudicator, and these costs shall be divided equally between the Employer and the Contractor.
- (e) Should the Adjudicator resign or die, or should the Employer and the Contractor agree that the Adjudicator is not fulfilling his or her function in accordance with the provision of the Contract, a new Adjudicator shall be jointly appointed by the Employer and the Contractor. Failing agreement between the Parties within twenty-eight (28) days, the new Adjudicator shall be appointed at the request of either Party by the Appointing Authority specified in the Appendix to the Contract titled Adjudicator, or, if no Appointing Authority is specified in the Contract, shall, from this point onward and until the Parties may otherwise agree on an Adjudicator or an Appointing Authority, be implemented as if there is no Adjudicator.

52.2 Arbitration

- (a) If either the Employer or the Contractor is dissatisfied with the Adjudicator's decision, or if the Adjudicator fails to give a decision within twenty-eight (28) days of a dispute being referred to him or her, then the Employer or the Contractor may, within fifty-six (56) days of such reference, give notice to the other Party, with a copy for information to the Adjudicator, of its intention to commence arbitration, as provided below, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given.
- (b) Any dispute in respect of which a notice of intention to commence arbitration has been given, in accordance with GC Sub-Clause 52.2(a), shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the IT Products and/or Services.
- (c) Arbitration proceedings shall be conducted in accordance with the rules of procedures specified in the Appendix to the Contract titled Adjudicator.

52.3 Notwithstanding any reference to the Adjudicator or arbitration in this clause,

- (a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree;

- (b) the Employer shall pay the Contractor any monies due the Contractor.

DO NOT COPY

SECTION VIII: PARTICULAR CONDITIONS

DO NOT COPY

Table of Clauses

1.	Definitions.....	3
5	Law and Language.....	3
8.	Time for Commencement.....	4
9.	Contractor's Responsibilities.....	4
11.	Contract Price.....	4
13.	Securities.....	4
15	Intellectual Property and Copyright.....	6
16	Software Licence Agreements.....	6
22:	Transport and Delivery.....	7
23:	Product Upgrades.....	7
28	Completion Time Guarantee.....	7
29	Defect Liability.....	7
33	Limitation of Liability.....	8
Particular	Additional Clauses Relating To Off-The-Shelf (OTS) Hardware.....	8
53.	Delivery.....	8
54.	Application.....	8
55.	The Rental Items.....	8
56.	Retention of Ownership.....	9
57.	Rental Defects.....	9
58.	Rent.....	9
59.	Duration of Lease.....	9
60.	No Encumbrances.....	9
61.	Quiet Enjoyment.....	10
62.	Damage.....	10
63.	Insurance.....	10
64.	Termination.....	10
65.	Application of this Part.....	10
66.	Training.....	11
67.	Managed Services.....	11
68.	Application of this Part.....	12
69.	Availability Of Maintenance Services.....	12
70.	Commencement Of Maintenance.....	12
71.	Preventative Maintenance.....	12
72.	Remedial Maintenance.....	13
73.	Maintenance Records.....	13
74.	Excluded Services.....	13
75.	Third Party Equipment.....	13

1. Definitions

The Bank is: Asian development Bank (ADB)

The Borrower is: Democratic Socialist Republic of Sri Lanka

The Contract Period is: 11 years (36 month Implementation, 3 years warranty and 5 years Maintenance)

Country of Origin is: [all countries and territories as indicated in Section V of the bidding documents, Eligible Countries]

The Employer is: Ministry of Transport and Civil Aviation

The Employer's Country is: Sri Lanka

The Post-Warranty Services Period is: The Contract Period – (minus) the Warranty period (Up to the end of the Contract) starting with the completion of the Warranty Period.

The Project Manager is: Mr. A. T. L. P. Samarasinghe,

No, 217, Cotta Road, Colombo 08, Sri Lanka.

pd@csrplk

Facsimile : +94112674354

The Project Site(s) is/are as specified in the Implementation Schedule in the Schedule of Requirements.

5. Law and Language

5.1 The Contract shall be interpreted in accordance with the laws of : Sri Lanka

5.2 The ruling language is: English.

5.3 The language for communications is: English

6 Corrupt Practices

.

ADB's Anticorruption Policy requires borrowers (including beneficiaries of ADB-financed activity), as well as bidders, suppliers, and contractors under ADB-financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, ADB:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

(i) "corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party;

(ii) "fraudulent practice" means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;

(iii) coercive practice means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

(iv) collusive practice means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party.

(v) integrity violation means any act, as defined under ADB's Integrity Principles and Guidelines, which violates ADB's Anti-Corruption Policy including corrupt, fraudulent, coercive, or collusive practice, abuse, and obstructive practice;

(vi) obstructive practice means (a) deliberately destroying, falsifying, altering or concealing of evidence material to an ADB investigation; (b) making false statements to investigators in order to materially impede an ADB investigation; (c) failing to comply with requests to provide information, documents or records in connection with an OAI investigation; (d) threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or (e) materially impeding ADB's contractual rights of audit or access to information.

(b) will reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices or other integrity violations in competing for the Contract;

(c) will cancel the portion of the financing allocated to a contract if it determines at any time that representatives of the borrower or of a beneficiary of ADB-financing engaged in corrupt, fraudulent, collusive, coercive or obstructive practices or other integrity violations during the procurement or the execution of that contract, without the borrower having taken timely and appropriate action satisfactory to ADB to remedy the situation;

(d) will sanction a firm or an individual, at any time, in accordance with ADB's Anticorruption Policy and Integrity Principles and Guidelines (both as amended from time to time), including declaring ineligible, either indefinitely or for a stated period of time, to participate in ADB-financed or administered or supported activities or to benefit from an ADB-financed, administered or supported contract, financially or otherwise, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices or other integrity violations; and

(e) will have the right to require the suppliers to permit ADB or its representative to inspect their accounts and records and other documents relating to contract performance and to have them audited by auditors appointed by ADB.

8. Time for Commencement

8.1 The Contractor shall commence work on the Railway Ticketing and Seat Reservation Products and/or Services within 28 days from the Effective Date for determining Time for Completion as specified in the Contract Agreement.

8.2 The Time for Completion of the whole Products and Services shall be thirty six(36) months from the Effective Date as described in the Contract Agreement.

9. Contractor's Responsibilities

9.7 Where the Contractor is a joint venture, consortium or association of two or more persons, all such persons shall jointly and severally bound to the Employer for the fulfilment of the provisions of the Contract.

11. Contract Price

11.2 The Contract Price is adjustable.

13. Securities

13.2 a) The Contractor shall provide, within twenty-eight (28) days of the notification of Contract award, an Advance Payment Security in the amount and currency of the Advance Payment specified in Appendix 6, Revised Price Schedules of the Contract Agreement.

b.) The Advance Payment Security will be progressively reduced based on milestone payments stated in Appendix 6, Revised Price Schedules of the Contract Agreement. The reduction schedule is as follows: *[insert suitable names of milestone payments, and a percentage reduction schedule consistent with reaching those payments while being mindful of the outlays the Contractor has to make to reach those payments]*.

No	Name of Project Milestone	Percentage Reduction in Advance Payment Security
1.	Commissioning of Back Office	10%
2.	Commissioning of Mobile Ticketing	6%
3.	Commissioning of Bar Code Ticketing	6%
4.	Commissioning of Hand-Held Bar code readers for validation at stations / on-board	6%
5.	Commissioning of Print@Home for Web sales	6%
6.	Commissioning of TVMs at stations and off-station	18%
7.	Commissioning of update all STO's to bar code ticketing	18%
8.	Commissioning of gates and validators to read bar-codes / smart cards	20%
9.	Commissioning of Smart cards and PAYG	5%
10.	Training	5%
11.	Final Payment	0%

13.3(a) The Performance Security shall be denominated in the currency/ies stated in the bid of the successful bidder for an amount equal to 10 percent of the Contract Price excluding any Recurrent Costs.

The form of the performance security is in the form of a bank guarantee, or cash deposit and shall be issued by a reputable bank or financial institution selected by the bidder. If the institution issuing the security is located outside Sri Lanka, it shall have a correspondent financial institution located in Sri Lanka to make it enforceable.

13.3(d) The Performance Security will be progressively reduced based on achieved project milestones payments stated in Appendix 2, Agreed and Finalised Project Plan, of the Contract Agreement. The reduction schedule is as follows: *[insert suitable names of project milestones, and a percentage reduction schedule consistent with reaching those milestones while being mindful of the risks to the Employer]*.

No	Name of Project Milestone	Percentage Reduction in Performance Security
1.	Commissioning of Back Office	5%
2.	Commissioning of Mobile Ticketing	6%
3.	Commissioning of Bar Code Ticketing	6%
4.	Commissioning of Hand-Held Bar code readers for validation at stations / on-board	6%
5.	Commissioning of Print@Home for Web sales	6%
6.	Commissioning of TVMs at stations and off-station	15%
7.	Commissioning of update all STO's to bar code ticketing	15%
8.	Commissioning of gates and validators to read bar-codes / smart cards	10%
9.	Commissioning of Smart cards and PAYG	6%
10.	Training	5%
11.	Final Payment	5%
12.	End of Warranty	15%

15 Intellectual Property and Copyright

15.3 The Employer may assign, license, or otherwise voluntarily transfer its contractual rights to use the Standard Software or elements of the Standard Software, without the Contractor's prior written consent, under the following circumstances:

none

15.4 The Employer's and Contractor's rights and obligations with respect to Custom Software or elements of the Custom Software are as follows

not applicable

The Employer's and Contractor's rights and obligations with respect to Custom Materials or elements of the Custom Materials are as follows

not applicable

15.5 No software escrow contract is required for the execution of the Contract.

16 Software Licence Agreements

16.1(a)(iii) The Standard Software license shall be valid throughout the territory of the Employer's Country.

16.1(a)(iv) Use of the software shall be subject to the following additional restrictions

none

16.1(b)(ii) The Software license shall permit the Software to be used or copied for use or transferred to a replacement computer(s) or users

not applicable

16.1(b)(vi) The Software license shall permit the Software to be disclosed to and reproduced for use (including a valid sublicense) by

not applicable

16.1(b)(vii) In addition to the persons specified in GCC Clause 16.1 (b) (vi), the Software may be disclosed to, and reproduced for use by, subject to the same restrictions as are set forth in this Contract.

not applicable

16.2 The Contractor's right to audit the Standard Software will be subject to the following terms:

when agreed together with SLR.

22: Transport and Delivery

22.5 The Contractor shall provide the Employer with shipping and other documents as specified in the GC.

23: Product Upgrades

23.4 The Contractor shall provide the Employer: with all new versions, releases, and updates to all Standard Software during the Warranty Period, for free, as specified in the GCC. The Upgrades will comply with the requirements of the SOR.

28 Completion Time Guarantee

28.2 Liquidated damages shall be assessed at 0.1 % per week. The maximum liquidated damages are 10 % of the Contract Price, or relevant part of the Contract Price if the liquidated damages apply to defined part of the IT Products and/or Services.

28.3 Liquidated damages shall be assessed only with respect to achieving Operational Acceptance.

29 Defect Liability

29.1 For Software, exceptions or limitations to the Contractor's warranty obligations shall be as follows: "None;"

29.2(c) The Contractor warrants that the following items have been released to the market for the following specific minimum time periods: [*"No specific minimum time requirements are established for this Contract other than that the Information Technologies must have been previously released to the market;" or specify: specific types of technologies and specific minimum time periods; for example, "All Standard Software must have been commercially available in the market for at least three months"*]. Not Applicable

29.3 The Warranty Period (36 Months) shall begin from the date of Operational Acceptance of the System

- 29.10 The Contractor must commence the work necessary to remedy defects or damage within [number of minutes] of notification.

33 Limitation of Liability

- 33.1(b) The multiplier of the Contract Price is 1.15

52 Disputes and Arbitration

- 52.1(e) If the Parties fail to agree, the appointing authority shall be the President, Institution of Engineers, Sri Lanka.

Particular Additional Clauses Relating to Off-The-Shelf (OTS) Hardware

53. Delivery

- 53.1 Late delivery must be agreed to by the Employer or liquidated damages, if specified in the PC, shall apply.
- 53.2 Notwithstanding the requirements set out in the SOR, the Contractor must ensure that the most recent models compatible with the software infrastructure are supplied, regardless whether the delivery is made in accordance with the SOR or is delayed.
- 53.3 The Contractor shall keep a record of the serial numbers of the Hardware that it supplies to the Employer under this Contract and shall provide such details within three days of receiving such a request from the Employer.

54. Application

- 54.1 To the extent that the Contractor leases or rents the Employer any Hardware, whether in conjunction with other Services or not the conditions of this Section K apply in addition to any other terms and conditions of the Contract.

55. The Rental Items

- 55.1 The Contractor is responsible for:
- a) the delivery and all costs associated with the delivery of the Rental Items to the Employer's premises; and
 - b) the installation of the Rental Items.
- 55.2 The Rental Items must be of the best quality and workmanship, free from faulty design and defects, suitable for the purpose intended and conform to the requirements stated in the SOR and any applicable International or Country standards.

- 55.3 The Contractor must provide all operating manuals and instructions for the Rental Items upon delivery and prior to Operational Acceptance.

56. Retention of Ownership

- 56.1 The Contractor retains full title to the Rental Items, notwithstanding that the Rental Items may be leased to and in the possession of the Employer.

57. Rental Defects

- 57.1 During the term of the lease, the Employer will notify the Contractor of any Defect in the Rental Items as soon as practicable after becoming aware of such Defect.
- 57.2 The Contractor must, at its own expense, do all things necessary to remedy the Defect and must reimburse the Employer for any costs incurred in connection with the Defect, including the cost of the Employer remedying the Defect if the Contractor does not do so within a reasonable period following notice of the Defect from the Employer.
- 57.3 If a Defect cannot be remedied, the Contractor must make replacement Rental Items available for lease to the Employer in accordance with the terms of the Contract.

58. Rent

- 58.1 The Employer will pay rent for the Rental Items to the Contractor monthly in arrears in accordance with the Appendix 5, Price and Payment Schedule to the Contract Agreement.
- 58.2 The rent is a fixed sum and is not subject to any rise and fall.

59. Duration of Lease

- 59.1 The Lease will continue for the period specified in the SOR. If the Employer continues to retain possession of the Rental Items, with the Contractor's consent, beyond the period specified in the Contract, the Employer shall be deemed to lease the Rental Items on a week to week basis on the same terms as the Contract, including any changes necessary to make the terms appropriate for a monthly lease.

60. No Encumbrances

- 60.1 The Employer must ensure that, whilst in its possession:
- a) the Rental Items are not sold or otherwise disposed of;
 - b) Rental Items are not shared with or provided to, nor sub leased, licensed or sub-licensed to any other person; and
 - c) no encumbrance is created over any Rental Items;
- without first obtaining the express written permission of the Contractor.

60.2 The Contractor is under no obligation to provide approval under Clause 60.1

61. Quiet Enjoyment

61.1 If the Employer pays the rent for the Rental Items and duly and punctually complies with all provisions of the Contract, the Employer may peaceably possess and enjoy the Rental Items during the term of the lease without any interruption or disturbance from the Contractor or any person lawfully claiming through the Contractor.

61.2 Unless otherwise specified in the Contract:

- a) the Contractor will be responsible for carrying out all routine and non-routine maintenance of the Rental Items that may be required during the term of the lease.
- b) the Contractor will maintain the Rental Items in good and operable condition.

62. Damage

62.1 The Employer will endeavour to protect the Rental Items against loss or damage.

62.2 However, the Employer will not be responsible for accidental loss of or damage to the Rental Items and the Contractor will indemnify the Employer and the Employer Group against any Claims for such loss or damage.

63. Insurance

63.1 The Contractor is responsible, at its own cost, for insuring the Rental Items for their full replacement value against accidental loss or damage.

64. Termination

64.1 At the end of the term of the lease or upon the termination of the Contract for any reason:

- a) the Rental Items will be returned to the Contractor subject to fair wear and tear given the conditions under which the Rental Items were employed;
- b) all costs associated with the return and delivery of the Rental Items from the Employer to the Contractor will be borne by the Contractor; and
- c) the Contractor may recover from the Employer all rent due and owing under the Contract at the date of termination.

65. Application of this Part

65.1 To the extent that the Contractor provides the Employer with additional services relating to any Hardware, whether in conjunction with other Services or not, the conditions of this Section L apply in addition to any other terms and conditions of the Contract.

66. Training

- 66.1 The Contractor shall submit a Training Schedule and Training Curriculum to the Employer for approval prior to the delivery of any training.
- 66.2 The Purchase shall either:
- a) approve the Training Schedule and Training Curriculum; or
 - b) provide feedback and details of any required changes to the Training Schedule and Training Curriculum;
- within 14 days. The Contractor shall promptly incorporate any required changes and resubmit the training schedule and training curriculum to the Employer in accordance with Clause 66.1 (Ref: Sec VI-5.5)
- 66.3 If the Employer wishes to cancel the training it must give five (5) days notice to the Contractor or pay 50% of the agreed fee.
- 66.4 The maximum number of attendees the Employer wishes to attend each training session must be specified in the SOR. Where the Employer requires the number of attendees to a training session to exceed this number the Contractor must agree to the increase in attendee numbers.
- 66.5 The Contractor shall issue each attendee with a signed certificate of attendance within 14 days of providing training to the Employer's Personnel.
- 66.6 The Contractor must procure from each attendee a completed Training Assessment Form and provide them to the Employer within 7 days of completion of any training. Where the average Training Score across all attendees for a particular training session is less than 50%, the Contractor must repeat the training with a new trainer at no additional cost to the Employer.

67. Managed Services

- 67.1 To the extent specified in the SOR, the Contractor shall provide Managed Services for the Employer, whether the IT Hardware was supplied by the Contractor under this Contract or not, at the fee provided for in the Price Schedule.
- 67.2 Prior to providing Managed Services, the Contractor shall audit all Hardware and prepare an asset register of all Hardware to be managed under this Contract. The asset register must contain, at a minimum, the make, model number, serial number, date of manufacture, and location of all managed Hardware, as well as any other details as specified in the SOR.
- 67.3 The asset register is to be maintained by the Contractor and kept current and up-to-date, reflecting all moves, additions and removals of the Hardware.
- 67.4 The Contractor must make available the asset register for periodic audit by the Employer or its nominated agent, and transfer the asset register to the Employer at the end of this Contract.
- 67.5 The Contractor shall proactively monitor all Hardware managed under this Contract and promptly attend to all faults in accordance with the timeframes set out in the SOR.

- 67.6 The Contractor shall keep on hand the minimum number of spare parts if specified in the SOR.
- 67.7 The Contractor may store manuals, tools and test equipment on site as required for the purposes of the Contract. The Employer agrees not to use any such manuals, tools or test equipment without the Contractor's consent. Unless otherwise specified in the SOR, the Contractor must, at its own cost, take out appropriate insurance for its stored items for their full replacement value against accidental loss or damage.

68. Application of this Part

- 68.1 To the extent that the Contractor maintains any Hardware under this Contract, whether the Hardware was supplied by the Contractor under this Contract or not, the conditions of this Section M apply in addition to any other terms and conditions of the Contract.

69. Availability of Maintenance Services

- 69.1 If and to the extent specified in the SOR, the Contractor will provide the Employer with Maintenance Services.
- 69.2 The Maintenance Services will comply with the requirements of the SOR.

70. Commencement of Maintenance

- 70.1 The initial term of the Maintenance Services to Hardware will not commence if the Services relate to Hardware purchased under this Contract, until the expiry of any relevant warranty period for the Hardware.
- 70.2 Any defect rectification required during the warranty period will be provided to the Employer by the Contractor free of charge. The Hardware Maintenance Services will commence on the date specified in the Contract Details and will be renewable as specified in the Contract Details.

71. Preventative Maintenance

- 71.1 If so specified in the SOR, the Contractor will provide Hardware Maintenance Services in the form of Preventative Maintenance and will ensure that:
- a) Preventative Maintenance is carried out in accordance with the requirements of the SOR; and
 - b) Preventative Maintenance is carried out at times specified in the SOR or otherwise at times when the equipment is either not operational or else at times likely to cause the least possible disruption to the Employer's business and in all cases only by prior arrangement with the Employer.
- 71.2 The Employer will cooperate with the Contractor by providing access and facilities as reasonably necessary to enable the Contractor to provide Preventative Maintenance to the required standard.

72. Remedial Maintenance

- 72.1 If required in the SOR, the Contractor will provide Hardware Maintenance Services in the form of Remedial Maintenance. Where the Contractor is required to provide Remedial Maintenance, it will, after being notified of a fault condition or possible fault condition in the equipment, promptly restore the equipment to good working order and will, as necessary:
- a) replace or repair parts;
 - b) comply with any response times specified in the Service Level Agreement;
 - c) to the extent practical, implement measures to minimise disruption to the Employer's operations during maintenance work as specified in SOR or Service Level Agreement; and
 - d) comply with any other requirements as specified in the SOR or Service Level Agreement.
- 72.2 The Employer will cooperate with the Contractor by providing access and facilities as is reasonably required.

73. Maintenance Records

- 73.1 Where required in the SOR, the Contractor will keep full records of its IT Hardware Maintenance Services and will provide copies of those records to the Employer within four (4) days of request.

74. Excluded Services

- 74.1 The Hardware Maintenance Services do not include any services expressly excluded in the SOR.

75. Third Party Equipment

- 75.1 Equipment which is the subject of the IT Hardware Maintenance Services may consist wholly or partly of hardware or office machines which have not been supplied by the Contractor under this Contract or at all.
- 75.2 No additional clauses see Software Licence Agreement attached to the SOR.

76. Respectful Work Environment

- 76.1 The Contractor shall ensure that its employees and sub-contractors observe the highest ethical standards and refrain from any form of bullying, discrimination, misconduct and harassment, including sexual harassment and shall, at all times, behave in a manner that creates an environment free of unethical behavior, bullying, misconduct and harassment, including sexual harassment. The Contractor shall take appropriate action against any employees or sub-

contractors, including suspension or termination of employment or sub-contract, if any form of unethical or inappropriate behavior is identified.

- 76.2 The Contractor shall conduct training programs for its employees and sub-contractors to raise awareness on and prevent any form of bullying, discrimination, misconduct and harassment including sexual harassment, and to promote a respectful work environment. The Contractor shall keep an up to date record of its employees and subcontractors who have attended and completed such training programs and provide such records to the Purchaser at their first written request.

SECTION IX: CONTRACT FORMS

DO NOT COPY

Table of Forms

1.	Contract Agreement.....	3
	Article 1. Contract Documents	3
	Article 2. Contract Price and Terms of Payment	4
	Article 3. Effective Date for Determining Time for Operational Acceptance.....	4
	Article 4. Communication	5
	Article 5. Appendices	5
	Appendix 1. Contractor’s Representative	7
	Appendix 2. Adjudicator and Arbitration	8
	Appendix 3. List of Approved Sub-Contractors	9
	Appendix 4. Categories of Software	10
	Appendix 5. Custom Documentation	11
	Appendix 6. Revised Price Schedules.....	12
	Appendix 7. Terms and Procedures for Payment.....	13
	Appendix 8. Agreed and Finalized Project Plan	14
	Appendix 9. List of Documents for Approval and Review	15
	Appendix 10. Functional Guarantees (Not Applicable)	16
	Appendix 11. Insurance Requirements	18
	Appendix 12. Software License Agreement	20
	Appendix 13. Schedule of Requirements	21
	Appendix 14. Minutes of Contract Finalization Discussions and Agreed Contract Amendments ...	22
2	Performance and Advance Payment Security Forms	23
	2.1 Performance Security Form (Bank Guarantee)	24
	2.2 Advance Payment Security Form (Bank Guarantee).....	25
3	Installation and Acceptance Certificates	26
	3.1 Installation Certificate.....	27
	3.2 Operational Acceptance Certificate	28
4	Change Order Procedures and Forms	29
	4.1 Request for Change Proposal Form (Employer).....	30
	4.2 Change Estimate Proposal Form (Contractor).....	32
	4.3 Estimate Acceptance Form (Employer)	33
	4.4 Change Proposal Form (Contractor).....	34
	4.5 Change Order Form (Employer)	36
	4.6 Application for Change Proposal Form (Contractor).....	38

1. Contract Agreement

THIS CONTRACT AGREEMENT is made the [nth] day of [month & Year].

BETWEEN

(1) *[Name of Employer], a corporation incorporated under the laws of [country of Employer] and having its principal place of business at [address of Employer] (hereinafter called "the Employer"),*

and

(2) *[Name of Contractor], a corporation incorporated under the laws of [country of Contractor] and having its principal place of business at [address of Contractor] (hereinafter called "the Contractor").*

WHEREAS the *Employer* desires to engage the Contractor to supply, install, achieve Operational Acceptance of, and support the following Smart Ticketing and Seat Reservation Products and /or Services [*brief description of the Smart Ticketing and Seat Reservation Products and/or Services*] ("the Smart Ticketing and Seat Reservation Products and/or Services"), and the Contractor has agreed to such engagement upon and subject to the terms and conditions appearing below in this Contract Agreement.

NOW IT IS HEREBY AGREED as follows:

Article 1.

1.1 Contract Documents (Reference GCC Clause 2)

Contract Documents

The following documents shall constitute the Contract between the Employer and the Contractor, and each shall be read and construed as an integral part of the Contract:

- a) *This Contract Agreement and the Appendices attached to the Contract Agreement*
- b) *Memorandum of Understanding, if any*
- c) *Letter of Acceptance*
- d) *Letter of Price Bid, Letter of Modified Bid, and Price Schedules including Supplementary Price Schedules submitted by the Contractor*
- e) *Letter of Technical Bid*
- f) *Schedule of Requirements (including Implementation Schedule)*
- g) *Particular Conditions of Contract*
- h) *General Conditions of Contract*
- i) *Specifications*
- j) *Drawings*

[Add here: any other documents. Check consistency with GC 2.2 and amend as appropriate]

1.2 Order of Precedence (Reference GCC Clause 2)

In the event of any ambiguity or conflict between the Contract Documents listed above, the order of precedence shall be the order in which the Contract Documents are listed in Article 1.1 (Contract Documents) above, provided that Appendix 14 shall prevail over all provisions of the Contract Agreement and the other Appendices

attached to the Contract Agreement and all the other Contract Documents listed in Article 1.1 above.

1.3 Definitions (Reference GCC Clause 1)

Capitalized words and phrases used in this Contract Agreement shall have the same meanings as are ascribed to them in the General Conditions of Contract.

Article 2.

Contract Price and Terms of Payment

2.1 Contract Price (GCC Clause 11)

The Employer hereby agrees to pay to the Contractor the Contract Price in consideration of the performance by Contractor of its obligations under the Contract. The Contract Price shall be the aggregate of: *[: amount of foreign currency A in words],[amount in figures], plus [: amount of foreign currency B in words],[amount in figures], plus [:amount of local currency in words], [:amount in figures]*, as specified in the Grand Summary Price Schedule.

The Contract Price shall be understood to reflect the terms and conditions used in the specification of prices in the detailed price schedules, including the terms and conditions of the associated Incoterms, and the taxes, duties and related levies if and as identified.

2.2 Terms of Payment (GCC Clause 12)

The terms and procedures of payment according to which the Employer will reimburse the Contractor are given in the Appendix (Terms and Procedures of Payment) hereto.

The Employer may instruct its bank pursuant to GC Clause 12.5 to issue an irrevocable confirmed documentary credit made available to the Contractor in a bank in the country of the Contractor. The credit shall be for an amount of *[insert an amount equal to the total payment for the foreign currency portion of the Contract Price for Products supplied from outside the Employer's Country less the advance payment to be made for Products supplied from abroad]*; and shall be subject to the Uniform Customs and Practice for Documentary Credits 1993 Revision, ICC Publication No. 500.

2.3 In the event that the amount payable under 2.2 is adjusted in accordance with GC 11.2 or with any of the other terms of the Contract, the Employer shall arrange for the documentary credit to be amended accordingly.

[The Employer may want to insert a similar provision for the payment of Products supplied from within the Employer's Country]

Article 3.

Effective Date for Determining Time for Operational Acceptance

3.1 Effective Date (GCC Clause 1.1)

The time allowed for supply, installation, and achieving Operational Acceptance of the Smart Ticketing and Seat Reservation Products and/or Services shall be determined from the date when all of the following conditions have been fulfilled:

- (a) This Contract Agreement has been duly executed for and on behalf of the Employer and the Contractor;
- (b) The Contractor has submitted to the Employer the advance payment security and performance security, in accordance with GCC Clause 13.2 and GCC Clause 13.3;
- (c) The Employer has paid the Contractor the advance payment, in accordance with GCC Clause 13.2;

(d) *[specify here: any other conditions, for example, opening/confirmation of letter of credit].*

Each party shall use its best efforts to fulfill the above conditions for which it is responsible as soon as practicable.

3.2 If the conditions listed under 3.1 above are not fulfilled within two (2) months from the date of this Contract Agreement because of reasons not attributable to the Contractor, the parties shall discuss and agree on an equitable adjustment to the Contract Price and the Time for Achieving Operational Acceptance and/or other relevant conditions of the Contract.

- Article 4.**
- Communication**
- 4.1 The address of the Employer for notice purposes, pursuant to GC 4.1 is: *[Insert address].*
- 4.2 The address of the Contractor for notice purposes, pursuant to GC 4.1 is: *[Insert address].*
- Article 5.**
- Appendices**
- 5.1 The applicable Appendixes listed below shall be deemed to form an integral part of this Contract Agreement.
- 5.2 Reference in the Contract to any Appendix shall mean the applicable Appendixes listed below and attached to this Contract Agreement, and the Contract shall be read and construed accordingly.

APPENDIXES *[Employer to list all Appendixes and add the statement (not applicable) if that particular Appendix does not apply to this contract]*

- Appendix 1. Contractor's Representative [refer GC 18.2(b)]
- Appendix 2. Adjudicator [refer GC 52(b)]
- Appendix 3. List of Approved Sub-Contractors [refer GC 20.1]
- Appendix 4. Categories of Software [refer GC Definition & Section IV Form]
- Appendix 5. Custom Materials [refer GC Definition & Section IV Form]
- Appendix 6. Revised Price Schedules (if any)
- Appendix 7. Terms and Procedures for Payment [refer GC 12.1]
- Appendix 8. Agreed and Finalized Project Plan [refer GC 19.1]
- Appendix 9. List of Documents for Approval and Review [refer GC 21.3(a)]
- Appendix 10. Functional Guarantees [refer GC 30.1]
- Appendix 11. Insurance Requirements [refer GC 38.1]
- Appendix 12. Price Adjustment [refer ITB GC 11.2]
- Appendix 13. Software License Agreement [refer GC 16.3]
- Appendix 14. Schedule of Requirements [refer GC 19.1]
- Appendix 15. Minutes of Contract Finalization Discussions and Agreed-to Contract Amendments

IN WITNESS WHEREOF the Employer and the Contractor have caused this Agreement to be duly executed by their duly authorized representatives the day and year first above written.

For and on behalf of the Employer

Signed:

in the capacity of *[: title or other appropriate designation]*

in the presence of

For and on behalf of the Contractor

Signed:

in the capacity of [*: title or other appropriate designation*]

in the presence of

CONTRACT AGREEMENT

dated the [*:number*]day of [*:month*], [*:year*]

BETWEEN

[*:name of Employer*], “the Employer”

and

[*:name of Contractor*], “the Contractor”

Appendix 1. Contractor's Representative

In accordance with GCC Clause 1.1 (b) (iv), the Contractor's Representative is:

Name: *[: name and provide title and address further below or state "to be nominated within fourteen (14) days of the Effective Date"]*

Title: *[if appropriate, : title]*

In accordance with GCC Clause 4.3, the Contractor's addresses for notices under the Contract are:

Address of the Contractor's Representative: *[as appropriate, : personal delivery, postal, cable, telegraph, telex, facsimile, electronic mail, and/or EDI addresses.]*

Fallback address of the Contractor: *[as appropriate, : personal delivery, postal, cable, telegraph, telex, facsimile, electronic mail, and/or EDI addresses.]*

Appendix 2. Adjudicator and Arbitration

(a) Adjudicator

In accordance with GCC Clause 1.1, the agreed-upon Adjudicator is:

Name: *[: name]*

Title: *[: title]*

Address: *[: postal address]*

Telephone: *[: telephone]*

In accordance with GCC Clause 6.1.3, the agreed-upon fees and reimbursable expenses are:

Hourly Fees: *[: hourly fees]*

Reimbursable Expenses: *[list: reimbursables]*

Pursuant to GCC Clause 6.1.4, if at the time of Contract signing, agreement has not been reached between the Employer and the Contractor, an Adjudicator will be appointed by the Appointing Authority named in the SCC.

(b) Arbitration

For a Contract with a Foreign Supplier:

In the case of a dispute between the Purchaser and the Supplier, the dispute shall be settled by arbitration in accordance with the "Rules of UNCITRAL" with "provisions of the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules".

Place of arbitration: Singapore.

For a Contract with a Local Supplier:

In the case of a dispute between the Purchaser and the Supplier, the dispute shall be settled by arbitration in accordance with the Laws of Sri Lanka as per the Arbitration Act No.11 of 1995 (as amended).

Place of arbitration: Colombo, Sri Lanka.

Appendix 3. List of Approved Sub-Contractors

The Employer has approved use of the following Sub-Contractors nominated by the Contractor for carrying out the item or component of the Smart Ticketing and Seat Reservation Products and/or Services indicated. Where more than one Sub-Contractor is listed, the Contractor is free to choose between them, but it must notify the Employer of its choice sufficiently in advance of the time when the subcontracted work needs to commence to give the Employer reasonable time for review. In accordance with GCC Clause 20.1, the Contractor is free to submit proposals for Sub-Contractors for additional items from time to time. No sub-contracts shall be placed with any such Sub-Contractors for additional items until the Sub-Contractors have been approved in writing by the Employer and their names have been added to this list of Approved Sub-Contractors, subject to GCC Clause 20.3.

[specify: item, approved Sub-Contractors, and their place of registration that the Contractor proposed in the corresponding attachment to its bid and that the Employer approves that the Contractor engage during the performance of the Contract. Add additional pages as necessary.]

Item	Approved Sub-Contractors	Place of Registration

Appendix 4. Categories of Software

The following table assigns each item of Software supplied and installed under the Contract to one of the three categories: (i) Smart Ticketing and Seat Reservation Products and/or Services Software, (ii) General-Purpose Software, or (iii) Application Software; and to one of the two categories: (i) Standard Software or (ii) Custom Software.

Software Item	(select one per item)			(select one per item)	
	System Software	General-Purpose Software	Application Software	Standard Software	Custom Software

Appendix 5. Custom Documentation

The follow table specifies the Custom Materials the Contractor will provide under the Contract.

Custom Materials

Appendix 6. Revised Price Schedules

The attached Revised Price Schedules (if any) shall form part of this Contract Agreement and, where differences exist, shall supersede the Price Schedules contained in the Contractor's Bid. These Revised Price Schedules reflect any corrections or adjustments to the Contractor's bid price, pursuant to the ITB Clauses 22.3, 34.4, and 42.1.1

Appendix 7. Terms and Procedures for Payment

Subject to the provisions of GCC Clause 12 (Terms of Payment), the Employer shall pay the Contract Price to the Contractor according to the categories and in the manner specified below. Only the categories Advance Payment and Complete System Integration relate to the entire Contract Price. In other payment categories, the term "total Contract Price" means the total cost of Smart Ticketing and Seat Reservation Products and/or Services under the specific payment category. Within each such category, the Contract Implementation Schedule may trigger pro-rata payments for the portion of the total Contract Price for the category corresponding to the Smart Ticketing and Seat Reservation Products and/or Services actually Delivered, Installed, or Operationally Accepted, at unit prices and in the currencies specified in the Price Schedules of the Contract Agreement.

(a) Advance Payment

Ten percent (10%) of the entire Contract Price, exclusive of all Recurrent Costs, shall be paid against receipt of a claim accompanied by the Advance Payment Security specified in GCC Clause 13.2.

(b) Smart Ticketing and Seat Reservation Technology Products, with the exception of Custom Software and Custom Materials:

Sixty percent (60%) of the total or pro-rata Contract Price for this category against Delivery

Ten percent (10%) of the same price against Installation

Ten percent (10%) of the same price against Operational Acceptance.

(c) Custom Software and Custom Materials (if applicable)

Sixty percent (60%) of the total or pro-rata Contract Price for this category against Installation

Twenty percent (20%) of the same price against Operational Acceptance.

(d) Support Services other than Training:

Eighty percent (80%) of the pro-rata Contract Price for services performed will be paid monthly in arrears, on submission and Employer's approval of invoices.

(e) Training

Thirty percent (30%) of the total Contract Price for training services at the start of the full training program

Fifty percent (50%) of the pro-rata Contract Price for training services performed will be paid monthly in arrears, on submission and approval of appropriate invoices.

(f) Product and/or Services Integration (if required)

Ten percent (10%) of the entire Contract Price, exclusive of all Recurrent Costs, as final payment against Operational Acceptance of the Smart Ticketing and Seat Reservation Products and/or Services as an integrated whole.

(g) Recurrent Costs

One hundred percent (100%) of the price of the Services actually delivered will be paid monthly in arrears, on submission and Employer's approval of invoices.

Appendix 8. Agreed and Finalized Project Plan

[Agreed and Finalized Plan to be inserted]

Appendix 9. List of Documents for Approval and Review

Pursuant to GC Sub-Clause 21.3, the Contractor shall prepare, or cause its Sub-Contractor to prepare, and present to the Project Manager the following documents for

A. Approval

1. etc

B. Review

1. etc

DO NOT COPY

Appendix 10. Functional Guarantees (Not Applicable)

[Insert or attach functional guarantee]

1. General

This Appendix sets out

- (a) the functional guarantees referred to in GC Clause 30 (Functional Guarantees)
- (b) the preconditions to the validity of the functional guarantees, either in production and/or consumption, set forth below
- (c) the minimum level of the functional guarantees
- (d) the formula for calculation of liquidated damages for failure to attain the functional guarantees.

2. Preconditions

The Contractor gives the functional guarantees (specified herein) for the facilities, subject to the following preconditions being fully satisfied:

[List any conditions for the carrying out of the Guarantee Test referred to in GC Sub-Clause 25.2.]

3. Functional Guarantees

Subject to compliance with the foregoing preconditions, the Contractor guarantees as follows:

3.1 Production Capacity

[List here the production capacity that the Contractor is to guarantee, making sure to use, as functional guarantees, the figures offered by the Contractor in its bid.]

and/or

3.2 Raw Materials and Utilities Consumption

[List here the guaranteed items of consumption per unit of production (e.g., kg, tons, kcal, kWh, etc.) that the Contractor is to guarantee, making sure to use, as functional guarantees, the figures offered by the Contractor in its bid.]

4. Failure in Guarantees and Liquidated Damages

4.1 Failure to Attain Guaranteed Production Capacity

If the production capacity of the facilities attained in the guarantee test, pursuant to GC Sub-Clause 25.2, is less than the guaranteed figure specified in paragraph. 3.1 above, but the actual production capacity attained in the guarantee test is not less than the minimum level specified in paragraph. 4.3 below, and the Contractor elects to pay liquidated damages to the Employer in lieu of making changes, modifications and/or additions to the Facilities, pursuant to GC Sub-Clause 28.3, then the Contractor shall pay liquidated damages at the rate of *[amount in the contract currency]* for every complete one percent (1%) of the deficiency in the production capacity of the Facilities, or at a proportionately reduced rate for any deficiency, or part thereof, of less than a complete one percent (1%).

4.2 Raw Materials and Utilities Consumption in Excess of Guaranteed Level

[To be specified in the appropriate wording for the type of Smart Ticketing and Seat Reservation Products and/or Services if there are consumption guarantees.]

If the actual measured figure of specified raw materials and utilities consumed per unit (or their average total cost of consumption) exceeds the guaranteed figure specified in paragraph. 3.2 above (or their specified average total cost of consumption), but the actual consumption attained in the guarantee test, pursuant to GC Sub-Clause 25.2, is not more than the maximum level specified in paragraph. 4.3 below, and the Contractor elects to pay liquidated damages to the Employer in lieu of making changes, modifications and/or additions to the Facilities pursuant to GC Sub-Clause 28.3, then the Contractor shall pay liquidated damages at the rate of *[amount in the contract currency]* for every complete one percent (1%) of the excess consumption of the Facilities, or part thereof, of less than a complete one percent (1%).

[The rate of liquidated damages specified in paragraphs. 4.1 and 4.2 above shall be at least equivalent to the rate specified in Section III, Evaluation and Qualification Criteria, for the comparison of functional guarantees provided by the bidders.]

4.3 Minimum Levels

Notwithstanding the provisions of this paragraph, if as a result of the guarantee test(s), the following minimum levels of performance guarantees (and consumption guarantees) are not attained by the Contractor, the Contractor shall at its own cost make good any deficiencies until the Facilities reach any of such minimum performance levels, pursuant to GC Sub-Clause 28.2:

- (a) production capacity of the Facilities attained in the guarantee test: ninety-five percent (95%) of the guaranteed production capacity (the values offered by the Contractor in its bid for functional guarantees represents 100%).

and/or

- (b) average total cost of consumption of all the raw materials and utilities of the Facilities: one hundred and five percent (105%) of the guaranteed figures (the figures offered by the Contractor in its bid for functional guarantees represents 100%).

4.4 Limitation of Liability

Subject to paragraph. 4.3 above, the Contractor's aggregate liability to pay liquidated damages for failure to attain the functional guarantees shall not exceed _____

Appendix 11. Insurance Requirements

Insurances to be taken out by the Contractor

In accordance with the provisions of GC Clause 38.1, the Contractor shall at its expense take out and maintain in effect, or cause to be taken out and maintained in effect, during the performance of the Contract, the insurances set forth below in the sums and with the deductibles and other conditions specified. The identity of the insurers and the form of the policies shall be subject to the approval of the Employer, such approval not to be unreasonably withheld.

(a) Cargo Insurance

Covering loss or damage occurring, while in transit from the Contractor's or manufacturer's works or stores until arrival at the Site, to the Facilities (including spare parts there for) and to the construction equipment to be provided by the Contractor or its Sub-Contractors.

<u>Amount</u>	<u>Deductible limits</u>	<u>Parties insured</u>	<u>From</u>	<u>To</u>
a. <i>[in currency(ies)]</i>		<i>[names]</i>	<i>[place]</i>	<i>[place]</i>

(b) Installation All Risks Insurance

Covering physical loss or damage to the Facilities at the Site, occurring prior to completion of the Facilities, with extended maintenance coverage for the Contractor's liability in respect of any loss or damage occurring during the defect liability period while the Contractor is on the Site for the purpose of performing its obligations during the defect liability period.

<u>Amount</u>	<u>Deductible limits</u>	<u>Parties insured</u>	<u>From</u>	<u>To</u>
a. <i>[in currency(ies)]</i>		<i>[names]</i>	<i>[place]</i>	<i>[place]</i>

(c) Third Party Liability Insurance

Covering bodily injury or death suffered by third parties (including the Employer's personnel) and loss of or damage to property (including the Employer's property and any parts of the Facilities that have been accepted by the Employer) occurring in connection with the supply and installation of the Facilities.

<u>Amount</u>	<u>Deductible limits</u>	<u>Parties insured</u>	<u>From</u>	<u>To</u>
a. <i>[in currency(ies)]</i>		<i>[names]</i>	<i>[place]</i>	<i>[place]</i>

(d) Automobile Liability Insurance

Covering use of all vehicles used by the Contractor or its Sub-Contractors (whether or not owned by them) in connection with the supply and installation of the Facilities. Comprehensive insurance in accordance with statutory requirements.

(e) Workers' Compensation

In accordance with the statutory requirements applicable in any country where the Facilities or any part thereof is executed.

(f) Employer's Liability

In accordance with the statutory requirements applicable in any country where the Facilities or any part thereof is executed.

(g) Other Insurances

The Contractor is also required to take out and maintain at its own cost the following insurances:

Details:

<u>Amount</u>	<u>Deductible limits</u>	<u>Parties insured</u>	<u>From</u>	<u>To</u>
<i>a. [in currency(ies)]</i>		<i>[names]</i>	<i>[place]</i>	<i>[place]</i>

The Employer shall be named as co-insured under all insurance policies taken out by the Contractor pursuant to GC Sub-Clause 38.1, except for the Third Party Liability, Workers' Compensation and Employer's Liability Insurances, and the Contractor's Sub-Contractors shall be named as co-insured's under all insurance policies taken out by the Contractor pursuant to GC Sub-Clause 38.1, except for the Cargo, Workers' Compensation and Employer's Liability Insurances. All insurers' rights of subrogation against such co-insureds for losses or claims arising out of the performance of the Contract shall be waived under such policies.

Appendix 12. Software License Agreement

[Agreed license to be inserted or attached]

Appendix 13. Schedule of Requirements

[SOR to be attached or inserted]

Appendix 14. Minutes of Contract Finalization Discussions and Agreed Contract Amendments

The attached Contract amendments (if any) shall form part of this Contract Agreement and, where differences exist, shall supersede the relevant clauses in the GC, PC, Schedule of Requirements, or other parts of this Contract as defined in GCC Clause 1.1.

2 Performance and Advance Payment Security Forms

2.1 Performance Security Form (Bank Guarantee)

[Bank's Name, and Address of Issuing Branch or Office]

Beneficiary: *[Name and Address of Employer]*

Date: *[date]*

PERFORMANCE GUARANTEE No.: *[Performance Guarantee Number]*

We have been informed that on *[date of award]* you awarded Contract No. *[Contract number]* for *[title and/or brief description of the Contract]* (hereinafter called "the Contract") to *[complete name of Contractor]* (hereinafter called "the Contractor"). Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Contractor, we hereby irrevocably undertake to pay you any sum(s) not exceeding *[amount(s)¹ in figures and words]* upon receipt by us of your first demand in writing declaring the Contractor to be in default under the Contract, without cavil or argument, or your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

On the date of your issuing, to the Contractor, the Operational Acceptance Certificate for the Smart Ticketing and Seat Reservation Products and/or Services, the value of this guarantee will be reduced to any sum(s) not exceeding *[amount(s)¹ in figures and words]*. This remaining guarantee shall expire no later than *[number and select: of months/of years (of the Warranty Period that needs to be covered by the remaining guarantee)]* from the date of the Operational Acceptance Certificate for the Smart Ticketing and Seat Reservation Products and/or Services,² and any demand for payment under it must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458, except that subparagraph (ii) of Sub-article 20 (a) is hereby excluded.

[Signature(s)]

¹ *The Bank shall insert the amount(s) specified and denominated in the PC for GC Clauses 13.3(a) and 13.3(d) respectively, either in the currency(ies) of the Contract or a freely convertible currency acceptable to the Employer.*

² *In this sample form, the formulation of this paragraph reflects the usual PC provisions for GC Clause 13.3. However, if the PC for GCC Clauses 13.3(a) and 13.3(d) varies from the usual provisions, this paragraph, and possibly the previous paragraph, need to be adjusted to precisely reflect the provisions specified in the PC.*

2.2 Advance Payment Security Form (Bank Guarantee)

[Bank's Name, and Address of Issuing Branch or Office]

Beneficiary: [Name and Address of Employer]

Date: [date]

ADVANCE PAYMENT GUARANTEE No.: [Advance Payment Guarantee Number]

We have been informed that on [date of award] you awarded Contract No. [Contract number] for [title and/or brief description of the Contract] (hereinafter called "the Contract") to [complete name of Contractor] (hereinafter called "the Contractor"). Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum of [amount in numbers and words, for each currency of the advance payment] is to be made to the Contractor against an advance payment guarantee.

At the request of the Contractor, we hereby irrevocably undertake to pay you any sum or sums not exceeding in total the amount of the advance payment referred to above, upon receipt by us of your first demand in writing declaring that the Contractor is in breach of its obligations under the Contract because the Contractor used the advance payment for purposes other than toward the proper execution of the Contract.

It is a condition for any claim and payment to be made under this guarantee that the advance payment referred to above must have been received by the Contractor on its account [number and domicile of the account].

For each payment after the advance payment, which you will make to the Contractor under this Contract, the maximum amount of this guarantee shall be reduced by the ninth part of such payment.³ At the time at which the amount guaranteed becomes nil, this guarantee shall become null and void, whether the original is returned to us or not.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

[Signature(s)]

³ This sample formulation assumes an Advance Payment of 10% of the Contract Price excluding Recurrent Costs, and implementation of the main option proposed by this MBD in the PC for GCC Clause 13.2(b) for gradually reducing the value of the Advance Payment Security. If the Advance Payment is other than 10%, or if the reduction in amount of the security follows a different approach, this paragraph would need to be adjusted and edited accordingly.

3 Installation and Acceptance Certificates

3.1 Installation Certificate

Loan/Credit Number: *[: loan or credit number from IFB]*

IFB: *[: title and number of IFB]*

Contract: *[: name and number of Contract]*

To: *[: name and address of Contractor]*

Dear Sir or Madam:

Pursuant to GCC Clause 26 (Installation of the Smart Ticketing and Seat Reservation Products and/or Services) of the Contract entered into between yourselves and the *[name of Employer]*(hereinafter the "Employer") dated *[date of Contract]*, relating to the *[brief description of the Smart Ticketing and Seat Reservation Products and/or Services]*, we hereby notify you that the Smart Ticketing and Seat Reservation Products and/or Services (or a Subsystem or major component thereof) was deemed to have been correctly installed on the date specified below.

1. Description of the Smart Ticketing and Seat Reservation Products and/or Services (or relevant Subsystem or major component: *[description]*)
2. Date of Installation: *[date]*

Notwithstanding the above, you are required to complete the outstanding items listed in the attachment to this certificate as soon as practicable. This letter shall not relieve you of your obligation to achieve Operational Acceptance of the Smart Ticketing and Seat Reservation Products and/or Services in accordance with the Contract nor of your obligations during the Warranty Period.

For and on behalf of the Employer

Signed:

Date:

in the capacity of: *[state: "Project Manager" or state the title of a higher level authority in the Employer's organization]*

3.2 Operational Acceptance Certificate

Date: [date]

Loan/Credit Number: [loan or credit number from IFB]

IFB: [title and number of IFB]

Contract: [name of Smart Ticketing and Seat Reservation Products and/or Services or Subsystem and number of Contract]

To: [name and address of Contractor]

Dear Sir or Madam:

Pursuant to GCC Clause 27 (Commissioning and Operational Acceptance) of the Contract entered into between yourselves and the [name of Employer] (hereinafter the "Employer") dated [date of Contract], relating to the [brief description of the Smart Ticketing and Seat Reservation Products and/or Services], we hereby notify you the Smart Ticketing and Seat Reservation Products and/or Services (or the Subsystem or major component identified below) successfully completed the Operational Acceptance Tests specified in the Contract. In accordance with the terms of the Contract, the Employer hereby takes over the Smart Ticketing and Seat Reservation Products and/or Services (or the Subsystem or major component identified below), together with the responsibility for care and custody and the risk of loss thereof on the date mentioned below.

1. Description of the Smart Ticketing and Seat Reservation Products and/or Services (or Subsystem or major component): [description]
2. Date of Operational Acceptance: [date]

This letter shall not relieve you of your remaining performance obligations under the Contract nor of your obligations during the Warranty Period.

For and on behalf of the Employer

Signed:

Date:

in the capacity of: [state: "Project Manager" or higher level authority in the Employer's organization]

4 Change Order Procedures and Forms

Date: *[date]*

Loan/Credit Number: *[loan or credit number from IFB]*

IFB: *[title and number of IFB]*

Contract: *[name of Smart Ticketing and Seat Reservation Products and/or Services or Subsystem and number of Contract]*

General

This section provides samples of procedures and forms for carrying out changes to the Smart Ticketing and Seat Reservation Products and/or Services during the performance of the Contract in accordance with GCC Clause 43 (Changes to the Smart Ticketing and Seat Reservation Products and/or Services) of the Contract.

Change Order Log

The Contractor shall keep an up-to-date Change Order Log to show the current status of Requests for Change and Change Orders authorized or pending. Changes shall be entered regularly in the Change Order Log to ensure that the log is kept up-to-date. The Contractor shall attach a copy of the current Change Order Log in the monthly progress report to be submitted to the Employer.

References to Changes

- (1) Request for Change Proposals (including Application for Change Proposals) shall be serially numbered CR-nnn.
- (2) Change Estimate Proposals shall be numbered CN-nnn.
- (3) Estimate Acceptances shall be numbered CA-nnn.
- (4) Change Proposals shall be numbered CP-nnn.
- (5) Change Orders shall be numbered CO-nnn.

On all forms, the numbering shall be determined by the original CR-nnn.

Annexes

- 4.1 Request for Change Proposal Form
- 4.2 Change Estimate Proposal Form
- 4.3 Estimate Acceptance Form
- 4.4 Change Proposal Form
- 4.5 Change Order Form
- 4.6 Application for Change Proposal Form

4.1 Request for Change Proposal Form (Employer)

(Employer's Letterhead)

Date: *[date]*

Loan/Credit Number: *[loan or credit number from IFB]*

IFB: *[title and number of IFB]*

Contract: *[name of Smart Ticketing and Seat Reservation Products and/or Services or Subsystem or number of Contract]*

To: *[name of Contractor and address]*

Attention: *[name and title]*

Dear Sir or Madam:

With reference to the above-referenced Contract, you are requested to prepare and submit a Change Proposal for the Change noted below in accordance with the following instructions within *[number]* days of the date of this letter.

1. Title of Change: *[title]*
2. Request for Change No./Rev.: *[number]*
3. Originator of Change: *[select Employer /Contractor (by Application for Change Proposal), and add: name of originator]*
4. Brief Description of Change: *[description]*
5. Subsystem or major component affected by requested Change): *[description]*
6. Technical documents and/or drawings for the request of Change:

Document or Drawing No.	Description
7. Detailed conditions or special requirements of the requested Change: <i>[description]</i>	
8. Procedures to be followed:
 - (a) Your Change Proposal will have to show what effect the requested Change will have on the Contract Price.
 - (b) Your Change Proposal shall explain the time it will take to complete the requested Change and the impact, if any, it will have on the date when Operational Acceptance of the entire Smart Ticketing and Seat Reservation Products and/or Services agreed in the Contract.

- (c) If you believe implementation of the requested Change will have a negative impact on the quality, operability, or integrity of the Smart Ticketing and Seat Reservation Products and/or Services, please provide a detailed explanation, including other approaches that might achieve the same impact as the requested Change.
 - (d) You should also indicate what impact the Change will have on the number and mix of staff needed by the Contractor to perform the Contract.
 - (e) You shall not proceed with the execution of work related to the requested Change until we have accepted and confirmed the impact it will have on the Contract Price and the Implementation Schedule in writing.
9. As a next step, please respond using the Change Estimate Proposal form, indicating how much it will cost you to prepare a concrete Change Proposal that will describe the proposed approach for implementing the Change, all its elements, and will also address the points in paragraph 8 above pursuant to GCC Clause 43.2. Your Change Estimate Proposal should contain a first approximation of the proposed approach, and implications for schedule and cost, of the Change.

For and on behalf of the *Employer*

Signed:

Date:

in the capacity of: *[state: "Project Manager" or higher level authority in the Employer's organization]*

4.2 Change Estimate Proposal Form (Contractor)

(Contractor's Letterhead)

Date: *[date]*

Loan/Credit Number: *[loan or credit number from IFB]*

IFB: *[title and number of IFB]*

Contract: *[name of Smart Ticketing and Seat Reservation Products and/or Services or Subsystem and number of Contract]*

To: *[name of Employer and address]*

Attention: *[name and title]*

Dear Sir or Madam:

With reference to your Request for Change Proposal, we are pleased to notify you of the approximate cost of preparing the below-referenced Change in accordance with GCC Clause 43.2 of the Contract. We acknowledge that your agreement to the cost of preparing the Change Proposal, in accordance with GCC Clause 43.2, is required before we proceed to prepare the actual Change Proposal including a detailed estimate of the cost of implementing the Change itself.

1. Title of Change: *[title]*
2. Request for Change No./Rev.: *[number]*
3. Brief Description of Change (including proposed implementation approach): *[:description]*
4. Schedule Impact of Change (initial estimate): *[description]*
5. Initial Cost Estimate for Implementing the Change: *[initial cost estimate]*
6. Cost for Preparation of Change Proposal: *[cost in the currencies of the Contract]*, as detailed below in the breakdown of prices, rates, and quantities.

For and on behalf of the Contractor

Signed:

Date:

in the capacity of: *[state: "Contractor's Representative" or other higher level authority in the Contractor's organization]*

4.3 Estimate Acceptance Form (Employer)

(Employer's Letterhead)

Date: [date]

Loan/Credit Number: [loan or credit number from IFB]

IFB: [title and number of IFB]

Contract: [name of Smart Ticketing and Seat Reservation Products and/or Services or Subsystem and number of Contract]

To: [name of Contractor and address]

Attention: [name and title]

Dear Sir or Madam:

We hereby accept your Change Estimate and agree that you should proceed with the preparation of a formal Change Proposal.

1. Title of Change: [title]
2. Request for Change No./Rev.: [request number / revision]
3. Change Estimate Proposal No./Rev.: [proposal number / revision]
4. Estimate Acceptance No./Rev.: [estimate number / revision]
5. Brief Description of Change: [: description]
6. Other Terms and Conditions:

In the event that we decide not to order the Change referenced above, you shall be entitled to compensation for the cost of preparing the Change Proposal up to the amount estimated for this purpose in the Change Estimate Proposal, in accordance with GCC Clause 43 of the General Conditions of Contract.

For and on behalf of the *Employer*

Signed:

Date:

in the capacity of: [state: "Project Manager" or higher level authority in the Employer's organization]

4.4 Change Proposal Form (Contractor)

(Contractor's Letterhead)

Date: *[date]*

Loan/Credit Number: *[loan or credit number from IFB]*

IFB: *[title and number of IFB]*

Contract: *[name of Smart Ticketing and Seat Reservation Products and/or Services or Subsystem and number of Contract]*

To: *[name of Employer and address]*

Attention: *[name and title]*

Dear Sir or Madam:

In response to your Request for Change Proposal No. *[: number]*, we hereby submit our proposal as follows:

1. Title of Change: *[name]*
2. Change Proposal No./Rev.: *[proposal number/revision]*
3. Originator of Change: *[select: Employer /Contractor; and add: name]*
4. Brief Description of Change: *[description]*
5. Reasons for Change: *[reason]*
6. The Smart Ticketing and Seat Reservation Products and/or Services Subsystem, major component, or equipment that will be affected by the requested Change: *[description]*
7. Technical documents and/or drawings for the requested Change:

Document or Drawing No.	Description
8. Estimate of the increase/decrease to the Contract Price resulting from the proposed Change: *[amount in currencies of Contract]*, as detailed below in the breakdown of prices, rates, and quantities.
 Total lump sum cost of the Change:
 Cost to prepare this Change Proposal (i.e., the amount payable if the Change is not accepted, limited as provided by GCC Clause 39.2.6):

9. Additional Time for Achieving Operational Acceptance required due to the Change: *[amount in days / weeks]*
10. Effect on the Functional Guarantees: *[description]*
11. Effect on the other terms and conditions of the Contract: *[description]*
12. Validity of this Proposal: for a period of *[number]* days after receipt of this Proposal by the Employer
13. Procedures to be followed:
 - (a) You are requested to notify us of your acceptance, comments, or rejection of this detailed Change Proposal within *[number]* days from your receipt of this Proposal.
 - (b) The amount of any increase and/or decrease shall be taken into account in the adjustment of the Contract Price.

For and on behalf of the Contractor

Signed:

Date:

in the capacity of: *[state: "Contractor's Representative" or other higher level authority in the Contractor's organization]*

4.5 Change Order Form (Employer)

(Employer's Letterhead)

Date: [date]

Loan/Credit Number: [loan or credit number from IFB]

IFB: [title and number of IFB]

Contract: [name of Smart Ticketing and Seat Reservation Products and/or Services or Subsystem and number of Contract]

To: [name of Contractor and address]

Attention: [name and title]

Dear Sir or Madam:

We hereby approve the Change Order for the work specified in Change Proposal No. [number], and agree to adjust the Contract Price, Time for Completion, and/or other conditions of the Contract in accordance with GCC Clause 39 of the Contract.

1. Title of Change: [name]
2. Request for Change No./Rev.: [request number / revision]
3. Change Order No./Rev.: [order number / revision]
4. Originator of Change: [select: Employer /Contractor; and add: name]

5. Authorized Price for the Change:

Ref. No.: [number]

Date: [date]

[amount in foreign currency A] plus [amount in foreign currency B] plus [: amount in foreign currency C] plus [amount in local currency]

6. Adjustment of Time for Achieving Operational Acceptance: [amount and description of adjustment]
7. Other effects, if any: [state: "none" or description]

For and on behalf of the Employer

Signed:

Date:

in the capacity of: *[state: "Project Manager" or higher level authority in the Employer's organization]*

For and on behalf of the Contractor

Signed:

Date:

in the capacity of: *[state "Contractor's Representative" or higher level authority in the Contractor's organization\]*

4.6 Application for Change Proposal Form (Contractor)

(Contractor's Letterhead)

Date: *[date]*

Loan/Credit Number: *[loan or credit number from IFB]*

IFB: *[title and number of IFB]*

Contract: *[name of Smart Ticketing and Seat Reservation Products and/or Services or Subsystem and number of Contract]*

To: *[name of Employer and address]*

Attention: *[name and title]*

Dear Sir or Madam:

We hereby propose that the below-mentioned work be treated as a Change to the Smart Ticketing and Seat Reservation Products and/or Services.

1. Title of Change: *[name]*
2. Application for Change Proposal No./Rev.: *[number / revision]* dated: *[date]*
3. Brief Description of Change: *[description]*
4. Reasons for Change: *[description]*
5. Order of Magnitude Estimation: *[amount in currencies of the Contract]*
6. Schedule Impact of Change: *[description]*
7. Effect on Functional Guarantees, if any: *[description]*
8. Appendix: *[titles(if any); otherwise state "none"]*

For and on behalf of the Contractor

Signed:

Date:

in the capacity of: *[state: "Contractor's Representative" or higher level authority in the Contractor's organization]*