



Technical Assistance Consultant's Report

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Regional: Functional Requirements Specifications for e-Government Procurement System Implemented in Software As A Service (SAAS) Model

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For the Asian Development Bank

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ABOUT THE AUTHOR

Dr. Ramanathan Somasundaram researched e-Government Procurement (e-GP) for his doctoral thesis work in Denmark and has more than years of experience in consulting, implementation and assessment of e-GP systems.

ABBREVIATIONS

ADB	–	Asian Development Bank
DMC	–	Developing Member Countries
FRS	–	Functional Requirements Specifications
SAAS	–	Software As A Service

NOTE

In this report, "\$" refers to US dollars

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I. INTRODUCTION

1. The ADB conducted a survey in the second half of 2014 to learn about the current status of e-GP implementation in Developing Member Countries (DMC) located in the Asia and Pacific Region. A total of 40 countries were contacted of which 29 countries responded to the survey. The survey sought to know – among other things – whether the respondent (i.e. country) is interested in using e-GP on Software As A Service (SAAS) model, if such a service were to be offered by the ADB. A total of 13 countries had expressed interest in using e-GP on SAAS model. Especially, the respondents expressed interest in using e-Publication and e-Bidding components of e-GP system.

2. Subsequently, ADB organized a workshop in May 2016 inviting representatives from these 13 countries to obtain their feedback on expectations and to gauge their interest in using e-GP in SAAS model. Based on this Workshop and a detailed study of procurement legislation in 3 Pacific Island Countries, Functional Requirements Specifications (FRS) for implementation of e-GP system in SAAS model was prepared.

II. FUNCTIONAL REQUIREMENTS SPECIFICATIONS

S.no.	Functional Requirements Specifications	
1. User Administration		
A	The system shall be role and access based, wherein a user designated as Administrator shall have the rights to assign and remove roles to a user	Must have
B	Such user administration can be managed by an official designated by the ADB or decentralized to one or all of the countries using e-GP on a shared model	Desirable
C	User ID shall be created in the name of designation (e.g. Purchasing official, Tuvalu) to which a person will be tagged. Transfer of users will be effected by changing person name tagged to the User ID. Thus, Bids processed and under processing will remain intact even if a purchasing official leaves job or gets transferred	Desirable
D	Transfer of users will be effected by changing details about a person tagged to a User ID	Desirable
E	A user shall have the provision to change the name, address and contact information after logging into the system	Desirable
F	System will e-mail password details to the e-mail address of the person registered during User ID creation	Must have
G	A system generated email will notify user about the User ID and password	Must have
H	A user will have the “Forgot password” option, which when exercised will send a password reset link to the e-mail address of the user registered in the system. The user shall necessarily key in a new password while acting on the link	Must have
I	“Admin” user will have the provision to reset password and generate a new password for a user	Desirable
J	Admin user can disable a user ID and edit / remove powers assigned to a user	Must have

S.no.	Functional Requirements Specifications	
2. Supplier / Vendor Registration		
A	Suppliers can fill an online form with certain key details such as the following and get registered in the e-Bidding platform: (i) Name of person / company (ii) Authorized representative (in case of company) (iii) Contact details (i.e.) phone, address and e-mail address	Must have
B	Registration in the e-Bidding platform will be free of charge	Must have
C	A user seeking to register will validate at least its e-mail address and preferably its mobile phone as pre-requisite for registration	E-mail validation – must have
D	A supplier registered in the System can freely participate and submit its bid in any of the Bids published by any purchasing agency covered under this initiative (i.e.) register once and participate in all Bids published under this initiative	Must have for open bidding. For restricted bidding – not necessary
E	Suppliers will have the option to reset its password online by self, in which case the reset password or a link to regenerate the password will be sent to the supplier's registered email address	Must have
3. e-Publication		
A	Provision to capture Bid category under "works", "goods" or "services" during creation of Bid	Must have
B	Provision to capture estimated value of Bid. Also, the procurement official should have the option to specify whether or not the estimated value should be published in the Bid inviting notice and made available for public view	Desirable
C	Invitation for Bids should at the minimum publish the following: (i) Name of procurement agency (ii) Brief description of the works, goods and services to be provided (iii) Agency contact person's name and contact details (iv) Bid publication date and time (v) Bid closing date and time (vi) Estimated value of the Bid (if applicable) (vii) Bid type (i.e. open / restricted / Expression of Interest / Two stage Pre-Bid conference information if it were to be held	Must have
D	Provision to extend the deadline for receipt of bids prior to expiry of the bid submission date and time	Must have The extension does not need to be automated
E	Provision to upload file attachments as addendum / corrigendum to the Bid prior to expiry of the bid submission date and time	Desirable
F	The system shall document any modifications of Bid documents after Bid is published. Adequate audit trail shall be present to point to time, nature and user ID of the person who modified the bid document.	Must have

S.no.	Functional Requirements Specifications		
	All registered bidders who downloaded previous version of the document shall be able to be notified on changes		
G	Suppliers will have the provision to register their interest: (i) In a particular Bid and/or (ii) In a particular category of Bids (iii) By participating in a Bid A notification will be sent to the suppliers by e-mail / SMS about corrigendum / addendum published for Bids in which suppliers had expressed interest or has participated in		Desirable.
H	Purchasing official shall have the option to specify whether online pre-bid conference is allowed during Bid publication. If it is allowed, the time-duration of the conference will be specified		Desirable
I	Where Contracting Authorities stage online pre-bid conferences and clarifications including, for example, online conferencing and chat facilities, such facilities shall not function after the bid submission deadline.		Desirable. The record of online pre-bid conference, if facilitated by the system, shall be available for audit
J	Where bidding is restricted or subject to pre-qualification or shortlisting, this shall be clearly disclosed in the bid advertising. The bid notification and contract award notification shall not be restricted.		Desirable
K	All clarifications and amendments or substitutions of the bidding documents, as well as any pre-bid conference minutes, shall be posted simultaneously onto a bid advertising website that is freely accessible to all, unless the bidding is restricted		Must have
L	Amendments or substitutions by any official will be tracked and recorded for audit. Systems shall ensure time, nature of change and user ID is recorded.		Must have
M	The system should separately record the due date and time for: (i) Bid submission & (ii) Bid opening		Must have
4. e-Bidding			
4.1 Bid Publication			
A	A	Purchasing official will specify whether Bid should be extended automatically if a certain minimum number of bids (e.g. 3 bids, a configurable feature) are not received. If the Bid were to be extended automatically, the purchasing official will key in the minimum number of bids (e.g. 3 bids) and the duration by which / date until which the Bid has to be extended.	Optional
	B	The system will validate the following to determine whether a Bid has to be automatically extended seconds before closure of the Bid: (i) Whether automatic extension is enabled (ii) Minimum number of bids received in the bid box	Optional

S.no.	Functional Requirements Specifications			
		Duration by which Bid has to be extended		
	C	During Bid publication, purchasing official will specify whether the Bid is: (i) Single stage a. Single envelope b. Two envelope (ii) Two stage Bid a. Expression of Interest / Pre-qualification stage – First stage b. Limited Bid – Second stage	Must have	
	D	In two-envelope Bids, the system will require purchasing official to distinctly specify the documents to be uploaded in the technical envelope and in the price envelope (i.e.) during Bid publication	Optional	
	E	Purchasing official will specify whether Bid security is required during Bid publication. If Bid security is required, the security amount and mode of payment will be keyed in the online form and the same will be shown in the published Bid notice.	Optional	
	F	Purchasing official will specify during Bid publication the currency or a list of currencies in which prices have to be submitted	Optional	
	G	Purchasing official will have the provision to create one or more lots during Bid preparation. Each lot can have one or more items in it.	Must have	
4.2 Request for Expression of Interest				
	B	Provision to invite Expression of Interest (EOI) Bids, wherein purchasing official will be required to specify the following key data fields during Bid publication just as in open Bids: (i) Title (ii) Description (iii) Upload bid documents and associated Bid conditions (iv) Compliance / qualification requirements / selection criteria (v) Documentary evidence requirements & (vi) Submission timeline Price information (i.e. price schedule) will not be solicited in such Bids	Must have	
4.3 Limited / Restricted Bid				
	C	A	Provision to publish a limited (restricted) Bid, wherein only the bidders selected / empanelled / pre-qualified in a Bid will be allowed to participate.	Must have
		B	Bid notification for limited Bid will be published for public record	Optional
		C	Selection of suppliers for the second stage should ideally done by calling the list of short-listed bidders in an EoI/ Pre-qualification or Empanelment/ Framework Agreement.	Optional
		D	The restricted Bid will be published and processed just	Must have

S.no.	Functional Requirements Specifications		
		as any single or two envelope Bids (i.e.) except that only the short-listed/ pre-qualified/ empaneled bidders can participate in such Bids.	
	E	In limited / single-source Bids, purchasing official will select suppliers authorized to participate in the Bids either from: (i) The list of bidders short-listed in an Expression of Interest / pre-qualification Bid (or) (ii) Individually select one or more suppliers / contractors from the supplier database of the system	Optional
4.4 Bid Submission			
D	A	Bidders will have the option to withdraw their proposals, modify and subsequently resubmit their proposals as many times as they so desire until expiry of bid submission timeline	Must have
	B	A bid will be considered for evaluation if it is marked as submitted at the time of bid submission timeline	Must have
	C	Receipt of electronic submissions, including the date and time, must be acknowledged immediately, and shall also be sent electronically.	Must have
	D	Where Bid security is required, suppliers will have the provision to upload a scanned copy of bid security during bid submission	Optional
	E	The system will validate whether all required online form data and required documents specified in the Bid have been submitted by bidders responding to the Bid, The bidder will receive online feedback if the bid is not considered submitted due to non-compliance with requirements	Must have
	F	The system will disallow suppliers to submit bids subsequent to expiry of bid submission deadline as defined in the Bid and as per the server time	Must have
	G	The server clock shall be displayed prominently in the bidding screen with the count-down implementation	Highly desirable
	H	The details of bids will be viewable by the concerned purchasing official only if they are marked as submitted and only after expiry of bid submission deadline	Must have
	I	In multi-currency Bids, the system will restrict bidders to quote in one of the currencies specified in the published Invitation for Bids	Optional
	J	The system shall require bidders to key in their price bid – at least the all-inclusive price –in online form	Highly desirable
	K	Bidders shall have the provision to upload file attachments detailing break-up of their price bid	Desirable
	L	Online submissions shall be received into an electronic bid box and maintained to high standards of security for long-term record keeping and audit. Especially, price bid and its associated attachments shall be encrypted and	Highly desirable

S.no.	Functional Requirements Specifications		
		stored. At no time shall bids/proposals be in unencrypted format.	
	M	The encrypted commercial quote will be treated as the original record. The integrity of the encrypted commercial quote shall not be affected subsequent to its decryption.	Must have
	N	In two-envelope Bids, the system will require Bidders to upload the technical envelope and price envelope documents / online forms in clearly distinguished place holders (i.e.) during bid submission	Must have
	O	Bidders can choose to participate in one or more of the lots published in a Bid	Must have
4.5 Bid opening			
E	A	Purchasing official can view details of bids submitted only after expiry of bid submission deadline	Must have
	B	Provision to implement Bid opening by one or more purchasing officials. Record of time and user ID shall be auditable	Optional
	C	System should disallow supplier from modifying its bids after expiry of bid submission deadline	Must have
	D	Suppliers can view Bid opening status in real-time directly from the e-Bidding portal	Highly desirable
	E	Subsequent to Price Bid opening, bidders can view only the names of other bidders participated in the Bid and their price quote (i.e. Bid amount).	Highly desirable
	F	The view of documentary evidence, technical proposal and other confidential information uploaded by bidders will be restricted only to the concerned bidder and the purchasing official	Highly desirable
	G	Subsequent to Bid opening, Bidders shall have the provision to view their own bid (i.e. online form and file attachments) just as purchasing officials can view their bid	Must have
	H	In single-envelope Bids, the system will open all documents uploaded by the bidders upon Bid opening.	Must have
	I	In two-envelope Bids, the system shall not allow opening Financial Bid unless results of Technical Bid evaluation are keyed in and the Bidders are qualified for their Financial Bid to be opened.	Must have
4.6 EOI Evaluation, Bid Evaluation & Award of Contract			
F		One or more suppliers can be selected / empanelled / pre-qualified from an EOI. The system will make the provision to reject one or more bidders during the first stage.	Highly desirable
G		System will provide an option to publish information about the selection / empanelment / pre-qualification of suppliers based on Eoi or Pre-qualification.	Highly desirable
H		In two-stage evaluation, purchasing official to open documents and online forms pertaining to technical envelope at first. Subsequent to Bid evaluation, the purchasing official will mark each bidding entity as either "qualified" or "not	Must have

S.no.	Functional Requirements Specifications	
	qualified” as pre-requisite to complete evaluation of technical proposals. The price bid of only the technically qualified bidders will be opened and considered for evaluation	
I	Evaluation and bidder selection will be done lot-wise. Bids with multiple lots can be awarded to more than one bidder	Must have
J	Negotiation (Optional module)	
A	Purchasing official can either choose to issue Letter of Intent to selected bidder(s) or choose to negotiate with one or more of the bidders in a Bid (i.e.) online in the e-Bidding platform	Optional
B	The bidder with which negotiation is initiated will log into the e-Bidding platform and either modify the price or upload a file attachment detailing the revised understanding with the purchasing official	Optional
C	Purchasing official will have the option to accept or reject or reinstate the negotiation process with the concerned supplier.	Optional
D	The system will maintain audit trails of the price originally quoted in the bid and the revised price subsequently quoted during negotiation. Similarly, the documents originally uploaded by suppliers during bid submission will remain intact. The document uploaded during negotiation will be registered and shown separately.	Must have
K	4.6.1 Award of Contract	
A	Purchasing official will have the option to select one or more suppliers in a Bid (in case of bidding in Lots), upload one or more file attachments as required and publish award of contract information	Highly desirable
B	The award of contract information thus published can be freely viewed by any interested party in the e-Bidding platform	Must have
C	The awarded price shall be recorded in the system in an online form as pre-requisite for publication of Award of Contract	Highly desirable
D	The issuance of Award of Contract should be marked by a status change in Bid	Must have
L	4.6.2 Cancellation of Bid (Optional module)	
	If provided, shall comply with requirements below	
A	Purchasing official will have the provision to cancel Bid any-time after Bid publication up until contract is awarded. Appropriate audit trail of time, date and user ID of the official will need to be recorded	Must have
B	Purchasing official will have a provision to provide justification in online form and / or upload a file attachment while cancelling a Bid	Must have
C	Cancellation of Bid should be marked by status change in Bid	Must have
M	4.6.3 Appeal / Complaint Handling (Optional module)	
A	Purchasing official will have the option to reverse the	Optional

S.no.	Functional Requirements Specifications	
	evaluation status of a bidder disqualified during Bid evaluation	
B	If the reversal were to be done in the first stage in Two-stage Bid, the price bid of the rejected supplier will be opened	Optional
N	4.6.4 Online Clarifications during Bid Evaluation (Optional module)	
A	Purchasing officials should have the option to seek clarifications online from bidders participating in a Bid one-on-one (i.e.) subsequent to Bid opening	Optional
B	Bidder should have the option to respond to these clarifications online	Optional
C	The interactions between purchasing official and bidder will be viewable only by the interacting parties and not by other bidders participating in the Bid	Optional
O	Archiving/ Audit Trail	
A	The system shall be capable to archive/ provide audit trail of all documents and all transactions relating to Bidding process.	Must have
B	Countries participating in the piloting of SaaS shall have possibility to download all the documents in readily readable format (e.g. PDF or similar) to maintain their own audit records. This functionality shall not attract any additional charge.	Must have
5. Technical Requirements		
A	The system shall be accessible over the Internet compatible with any of the commonly used browsers	Must have
B	The system shall have a robust Identity and Access Management controls, wherein the access rights assigned to a user will be verified during login	Must have
C	The system shall have the provision to send e-mails as a result of certain pre-defined set of actions such as: (i) Bid opening intimation (ii) Supplier is intimated about a corrigendum for a Bid in which it has participated or has expressed interest (iii) Supplier is notified about Bid publication (iv) Bid submission acknowledgement is sent to supplier (v) Award of contract notice is mailed to all suppliers which participated in a Bid	Must have
D	Transport later security via SSL	Must have
E	The system should ensure that secure records are kept of every process, procedure, transmission, receipt, transaction in terms of the content, executing individual and authorizations, time and date. Such records shall be kept online for all Bids processed in the system up until end of the e-GP service contract period.	Must have
F	A feature should be made to allow users to download all records (i.e. data keyed in online forms, file attachments and system logs) pertaining to the concerned users or the	Must have

S.no.	Functional Requirements Specifications	
	Government agency as a whole. The data keyed in online forms shall be stored in a machine readable format such as .xls or .pdf. The user should have the option to download all of its data in a user friendly manner within minimum number of clicks.	
G	Files uploaded in the system shall be subjected to virus scanning.	Must have
H	The e-GP service provider shall develop, maintain and implement an information security management system that conforms with international standards for information management and takes account of recognized best practice, including but not limited to asset security, access security, human resource security, operations management and business application controls, documentation and script sufficiency and security, physical and online security, business continuity, record keeping and compliance.	Must have
I	The e-GP system and the installation shall be subjected to a security audit and there shall be no outstanding audit issues.	Must have
J	The system should be hosted in a robust data centre with redundancy built in on all key components such as server infrastructure, power, cooling systems and internet connectivity	Must have
K	The server infrastructure should be deployed in a load balanced mode and the system should be designed to scale both horizontally and vertically as required. The e-GP installation should have had a history of at the minimum 97% availability in the last year	Must have
L	All data – (i.e.) including database, file system and logs – should be automatically backed up in regular intervals. The maximum possible data (i.e. Recovery Point Objective) should at the most be 4 hours.	Must have
M	Both telephonic and e-mail based help desk support should be provided. A ticket should be raised when a complaint is launched and such a ticket should be resolved in a timely manner. Faults should be fixed at the most within 12 working hours	Email support (must have) Highly desirable
N	Either purchasing officials nor suppliers or any other users should not have to wait for the intervention by e-GP service provider for any reason whatsoever to complete the procurement process	Highly desirable
O	e-GP service provider shall have implemented the requisite tools to auto-generate reports on system availability and shall also maintain records on the time taken for fault resolution.	Highly desirable