

REQUEST FOR PROPOSAL



**Development and Deployment of e-Registration System
with Supply, Installation and Commissioning of I.C.T
Infrastructure along with renovation of dedicated sites of
Board of Revenue Sindh**

September 2017

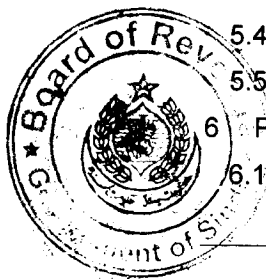


**PROJECT MANAGEMENT UNIT
AUTOMATION OF STAMPS & REGISTRATION
REFORMS WING & SPECIAL CELL
BOARD OF REVENUE, GOVERNMENT OF SINDH**



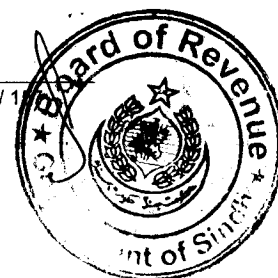
Table of Contents

1	Request for Proposals (RFP).....	6
2	RFP Terminology	7
3	RFP Guidelines	7
3.1	Objectives of the Assignment.....	7
3.2	E-Governance Interventions.....	9
3.3	Business Process Re-Engineering (BPR).....	9
3.4	Indicative Scope of the Assignment.....	9
4	Technical Requirements	10
4.1	Software Development and Deployment	10
4.1.1	Introduction	10
4.1.2	System Architecture.....	10
4.1.3	General Process Flow.....	13
4.1.4	Software Components	17
4.2	Central Site and Disaster Recovery Site Hardware.....	41
4.2.1	Summary.....	41
4.2.2	Technical Specifications (Primary site solution)	42
4.2.3	Software & Licenses	53
4.2.4	Technical Specifications (DR site Hardware Solution)	60
4.2.5	Commissioning / Acceptance Criteria	61
4.2.6	Scope of work	62
4.3	Site Hardware, Electrical Equipment and Civil Work.....	62
4.3.1	Summary.....	62
4.3.2	Detailed Bill of Quantities	63
	Scope of Work	92
4.4	Network Connectivity.....	98
4.4.1	Summary.....	98
4.4.2	Scope of Work	99
4.4.3	Detailed Bill of Quantities	101
4.4.4	Bandwidth Requirement.....	108
4.4.5	SMS Gateway Service	108
4.4.6	Documentation.....	109
4.4.7	Testing, Commissioning and Equipment Certification.....	109
5	General Instruction.....	109
5.1	Preventive maintenance:.....	110
5.2	Bidder guarantee	110
5.3	Warranty & Support.....	110
5.4	Acceptance Certificate.....	110
5.5	End of Sale/Life & Support.....	111
6	Project Activity Milestones	111
6.1	Payment Schedule	112



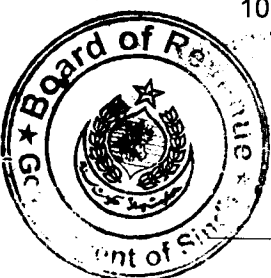


6.1.1	Software Design, Development and Deployment.....	112
6.1.2	Central Site & Disaster Recovery Site H/w Requirement.....	114
6.1.3	Site Hardware, Electrical Equipment and Civil Work.....	114
6.1.4	Network Connectivity	115
6.2	Project Location.....	115
6.3	Deliverables of the Assignment.....	115
6.3.1	Key Tasks	115
6.3.2	Mode of Bidding	116
6.3.3	Procurement Schedule	116
6.4	Cost of Bidding	117
6.5	The Bidding Documents	117
6.5.1	Content of Bidding Documents	118
6.5.2	Pre-bid Meeting for Clarification on RFP.....	118
6.5.3	Clarification if any on RFP.....	119
6.6	Preparation of Bids.....	119
6.6.1	Language of Bid.....	119
6.6.2	Documents Comprising the Bid.....	119
6.6.3	Bid Prices.....	120
6.6.4	Bid Currencies	120
6.6.5	Documents Establishing the Conformity of Proposed Solution to Bidding Documents.....	120
6.6.6	Bid Validity and Security	120
6.6.7	Format and Signing of Bid	121
6.7	Submission of Bids.....	121
6.7.1	Sealing and Marking of Bids	121
6.7.2	Deadline for Submission of Bids	122
6.7.3	Late Bids.....	122
6.7.4	Modification and Withdrawal of Bids	122
6.8	Bid Opening and Evaluation.....	123
6.8.1	Opening of Technical Bids by Purchaser	123
6.8.2	Eligibility Criteria for Bidders	123
6.8.3	Evaluation of Technical Bids by Purchaser.....	124
6.8.4	Opening of Financial Bids by Purchaser	127
6.8.5	Clarification of Bids	127
6.8.6	Preliminary Examination of Financial Bids	127
6.8.7	Compliance Sheet.....	128
6.8.8	Financial Bids.....	128
6.8.9	Evaluation and Comparison of Financial Bids.....	132
6.8.10	Contacting the Purchaser.....	132
6.9	Award Criteria.....	132
6.9.1	Purchaser's Right to accept any bid and to reject any or all bids	133
6.9.2	Notification of Award	133
6.9.3	Signing of Contract	133
6.9.4	Performance Security	133
7	Conditions of Contract.....	133
7.1	Applicable Laws.....	134





7.2	Taxes and Duties.....	134
7.3	Stamp Duty	134
7.4	Contract Language	134
7.5	Notices	134
7.6	Correspondence	134
7.7	Patent Rights	134
7.8	Officials not to Benefit.....	134
7.9	Modifications/Amendment to Contract	134
7.10	Standards	135
7.11	Confidentiality of Information	135
7.12	Quality	135
7.13	Assignment.....	135
7.14	Change of Order.....	135
7.15	Execution of Contract.....	136
8	Terms and Conditions	136
8.1	Ownership.....	136
8.2	Governing Law.....	136
8.3	Contractor's Negligence	137
8.4	Delays in Performance	137
8.5	Contractor's Default.....	137
8.6	Documentation.....	137
8.7	Termination of Contract.....	138
8.7.1	Termination of Contract for Default	138
8.7.2	Termination for Insolvency	138
8.8	Liquidated Damages.....	138
8.9	Amicable Settlement.....	139
8.10	Force Majeure	139
9	Bid Response Forms.....	140
9.1	Technical Proposal.....	140
9.1.1	Cover Letter	140
9.2	BID FORM	142
9.3	BID SECURITY FORM.....	144
9.4	PERFORMANCE SECURITY FORM	145
10	Technical Evaluation Forms	146
10.1	Specimen of Affidavit	157





List of Tables

Table 1: Procurement Schedule	117
Table 2: Technical Evaluation Criteria	126





1 Request for Proposals (RFP)

- 1.1 This Request for Proposal (RFP) is being issued for the project, **"Development and Deployment of e-Registration System with Supply, Installation and Commissioning of I.C.T Infrastructure along with renovation of dedicated sites of Board of Revenue Sindh.**
- 1.2 The Purchaser invites sealed bids from interested bidders for the work, services and supplies as specified in the RFP.
- 1.3 Bidding documents (and additional copies) may be purchased at the address given at the bottom of this page upon payment of a non-refundable fee of Pak Rupees 2,000/- in the form of Pay Order.
- 1.4 Bids shall be valid for a period of 90 days after Bid closing and must be accompanied by security of 2% of the total quoted bid price, and may be delivered to the address given at the bottom of the page as per procurement schedule at section 3.2.12 in presence of the bidders who wish to attend. Late bids would be rejected.
- 1.5 The RFP is issued in strict compliance with Sindh Public Procurement Rules 2010 and bids would be accepted and evaluated under the recommended single stage – two envelope procedure, under SPPR 2010 as amended till date.
- 1.6 Bidders may obtain further information from the Purchaser during normal working hours at the address given below and submit queries via letter or fax to the Point of Contact.
- 1.7 All bids must be accompanied by a bid security, in the form of a Bank Guarantee (from a Scheduled Bank in Pakistan), Demand Draft/Pay Order, of not less than two percent (2%) of the bid price. Company/Personal Cheques or Insurance Guarantee are NOT acceptable forms of bid security. The bid security must be valid for 28 days beyond the Bid Validity period.
- 1.8 Attention of prospective Bidders is drawn to (i) the fact that they will be required to certify in their bids that all deliverable(s) to be used would be either covered by a valid license or will be produced by the Bidder and (ii) that violations are considered fraud, which is, among other remedies, punishable by potential blacklisting from participation in future procurements.
- 1.9 The point of contact for all correspondence is:



Project Director
Automation of Stamps & Registration
Board of Revenue, Government of Sindh
C-73, Kehkashan, Clifton, Block-2, Karachi.
Tel: +92-21-99251415-6
Fax: +92-21-35291752



2 RFP Terminology

- 2.1. "RFP" or "Request for Proposals" means this document and the Bid Response Forms;
- 2.2. "Bidder" means a company that has been invited to submit and intends to submit a proposal in response to this RFP;
- 2.3. "Purchaser" means the Project Director Automation of Stamps & Registration, Board of Revenue, Government of Sindh;
- 2.4. "Contract" means written agreement resulting from this RFP executed by the Purchaser and the successful bidder.
- 2.5. "Contractor" means a person, firm, company or organization that undertakes to execute works including services related thereto, other than consulting services, incidental to or required for the contract being undertaken for the works;
- 2.6. "Government" means the Government of Sindh.
- 2.7. "Procuring Agency" means, Reforms Wing & Special Cell, Board of Revenue and Government of Sindh.
- 2.8. "Supplier" means a person, firm, company or an organization that undertakes to supply goods and services related thereto, other than consulting services, required for the contract.
- 2.9. "Services" means any object of procurement other than goods or works
- 2.10. "Response Time" means, the period starting from the first date of issuance of bidding documents up to last date of issuance of bidding documents."
- 2.11. "Lowest Evaluated Bid" means a bid most closely conforming to evaluation criteria and other conditions specified in the bidding document, having lowest evaluated cost;"

3 RFP Guidelines

3.1 Objectives of the Assignment

Government of Sindh is pursuing wide ranging e-governance reforms to bring about efficiency and good governance. As a part of its multi-pronged reform approach, the Board of Revenue Sindh has initiated the project for Automation of Registration and Stamps in Sindh to facilitate common man, prevent process related fraudulent practices and leakage of government revenues.





In the present system, the process of registration of properties, deeds and documents requiring compulsory or optional registration as specified in Section 17 & Section 18 of the Registration Act, 1908 is carried out through manual system of record keeping. The process is lengthy, arcane and time consuming requiring multiple visits and verification of titles and payments of fees, duties and taxes. Moreover, the process is extremely hectic, lacks transparency and people try to save their time and to avoid hassle through the use of various middle men which results in increase in the cost of transaction. In addition to being time consuming, some of the other major issues in the existing system included security threats despite the security paper and possible revenue leakage due to under valuation of the transactional costs. In the current system, there is high administration cost.

The Government of Sindh intends to bring transparency, efficiency and improvement in public service delivery through the use of modern technology interventions and e-Governance. Project of Automation of stamps & registration in Sindh is accordingly approved and included in the current year ADP. Following are the core objectives of the assignment:

- To simplify the registration procedures through re-engineering of the processes to optimize public facility through minimal visits and less waiting times.
- To provide mechanism for registration of documents in one single day through introduction of electronic stamping and registration of documents at one place to enhance both public facility and to minimize discretionary powers and to eliminate corruption through malpractices.
- To avoid undue delays in service delivery through re-engineering of existing processes.
- To enhance the existing IT capacity of all sub-registrar offices to bring in conformity with the modern state of the art technology as well as in compatibility with the LARMIS (Central Land Record Management Information System).
- To centralize record keeping of the entire registered record of the province through establishment of a disaster recovery center (back up data Center) as well as enhancement of the existing data center equipped with modern technology.
- Adopting international best practices, the goals have been set to bring value proposition to the stakeholders and have been succinctly articulated as under:
 - Public to get easy access to relevant records, get their grievances redressed effectively, and get their property registered;
 - Registration and Stamp department to ensure proactive and effective compliance of relevant laws and corporate governance i.e. enablement of employees to deliver best services.

In addition to the objectives already defined above, following objectives and benefits of the system are envisaged:

- To provide user-friendly, efficient and transparent system
- To provide honest evaluation for the system
- To enhance the speed, reliability and consistency of the system
- To automate the back office functions





- To create a system that would enable setting quality and timelines for all registration services
- To smooth the citizen-government interface

3.2 E-Governance Interventions

In the proposed system, there will also be no more multiple visits of the citizens to Sub-Registrar Offices and no more additional fees of agents. The system of registration will be simple and maximum of the processes will be automated. The web based system would provide necessary templates of all nature and type of instruments and would also provide facility of online calculation of fees and taxes payable for registration thereof. The credentials will be verified online from NADRA database (in real time) of all parties under transaction along with person's biometric. The system integrated with centralized database of Land Records established under LARMIS and other land governing agencies will provide online verification of titles. A secure system of payment of registration fee, CVT and other taxes would be established for which the financial model of the system would provide necessary integration with allied financial institutions to avoid leakages. The message alert tracking system will keep the parties aware about the status of their transactions.

To meet the above targets, Services of an I.T Firm / consortia of firms / organizations with domain knowledge, understanding and proven record in system design and development of an efficient Revenue Generating business model and its deployment and catering to internationally recognized IT standards given hereunder are required under the Project of Automation of Stamps and Registration in Sindh.

3.3 Business Process Re-Engineering (BPR)

M/s NADRA has carried out analysis and redesign of workflows within and between enterprises in order to optimize end-to-end processes and automate non-value-added tasks to enable the Department to improve its operational performance, monitoring and evaluation capability, and to achieve responsive, effective, and accountable governance.

M/s NADRA has studied in detail the as is model of Stamps & Registration covering all aspects of the system.

After finalizing the re-engineered to-be model M/s NADRA has designed architecture of the proposed system.

3.4 Indicative Scope of the Assignment

The Board of Revenue, Government of Sindh seeks to contract a vendor who would provide a turnkey solution for the development and deployment of an E-Registration solution. The scope and deliverables for the purposes of this project pertain to the development of an E-Registration Software, Acquisition and Installation of Hardware, establishment of Network Infrastructure, Supplying Fixture & Furniture and conducting Civil Works on Registration Sites, deployment of solution, testing and training of solution and provision of maintenance services. These requirements need





to be adhered to in entirety and compliance will be assessed by the supervision consultant as well as Board of Revenue, Government of Sindh.

4 Technical Requirements

4.1 Software Development and Deployment

The Successful Bidder shall design, develop and deploy customized / tailored and error-free Registration system based on the guidelines as are described under this section.

4.1.1 Introduction

The e-Registration System allows digital processing of applications received for registration at Sub-Registrar Offices (SRO). The process of registration starts over the internet where all the document templates will be available. The applicant will visit the SRO after initiating the application online. Registration is an interactive process where the customer has to physically visit the SRO in order to complete the process.

The registration process is complete after the SRO approves the application and an inspector verifies it. The system will integrate with several stakeholders including financial system for payment of Government fee and taxes. Integration with SMS system, legacy database, LARMIS, NADRA, Banking Solutions, GIS and e-stamping system are critical to the e-Registration System.

The system will host a central database and will be connected to the SRO through dedicated network. Network communication will be mandatory for operations at the SRO. All communications over the private network will be encrypted.

4.1.2 System Architecture

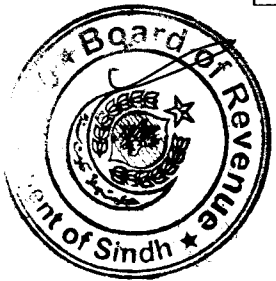
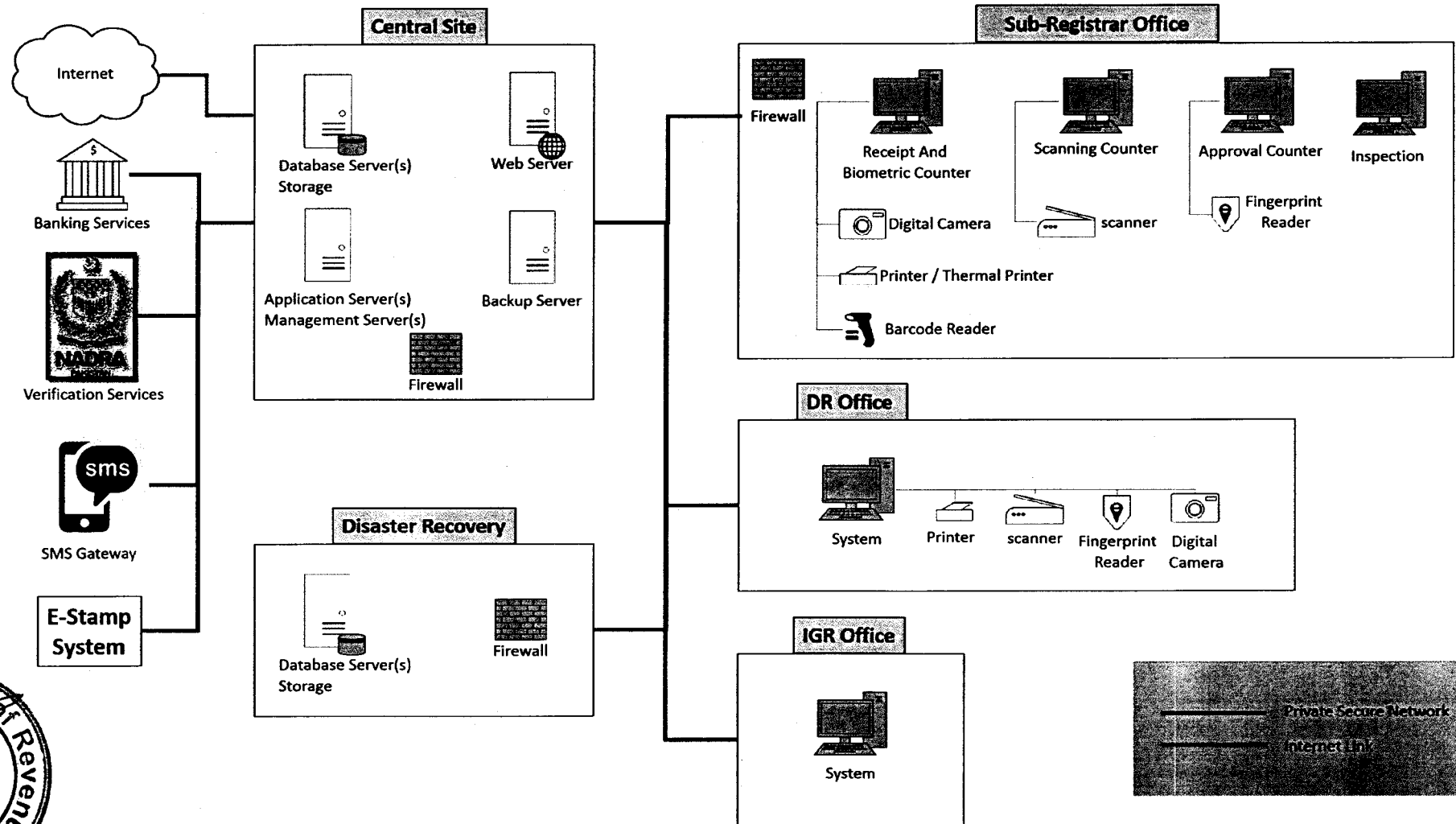
The successful bidder shall design the software architecture. It is expected that successful bidder would add more value to our solution by incorporating suggestions and recommendations, which will address Performance, High Availability, Security, Scalability, Manageability and Data Integrity.

The system will be deployed over the following six types of sites. All sites will be connected through a redundant private network and secured through firewalls. The central site will also be connected to high speed internet.

- Central Site
- Disaster Recovery Site
- Sub-Registrar Office
- District Registrar Office
- Inspector General of Registration Office
- Inspection Office



4.1.2.1 General System Architecture



4.1.2.1.1 Central Site

The Board of Revenue Sindh already has a datacenter in Karachi. This data center will host the central site and allied hardware infrastructure of the e-Registration System. The database servers and storage, application, backup and web servers will be installed at this site. A tape library will also be installed at the central site for backup and recovery. The power, LAN, cooling and support infrastructure is already present in the datacenter.

4.1.2.1.2 Disaster Recovery Site

The Board of Revenue Sindh already has a disaster recovery site at a separate location. This site will be used to host the DR servers and storage.

4.1.2.1.3 Sub-Registrar Office

There are 89 SROs throughout the province of Sindh. The SRO is responsible for accepting applications from applicants. The sites will be connected to the central site at all times for operations. Desktop computers along with support devices will be installed at each site along with LAN Infrastructure. The support devices include printers, scanners, fingerprint readers, barcode readers and digital cameras, etc. Each site will have a minimum quantity of hardware which may increase depending on application load of each site.

4.1.2.1.4 District Registrar Office

The DR Office will have one or more desktop computers to access the e-Registration system. Supporting hardware such as digital camera, printers, etc. may be required and explained in the detailed BOQ for each site, further in this document.

4.1.2.1.5 Inspector General of Registration Office

The IGR Office will have one or more desktop computers to access the e-Registration system.

4.1.2.1.6 Inspection Office

The Inspection Office will have 15 desktop computers to access the complete information of the application for inspection. Supporting hardware such as digital camera, biometric scanner, etc. may be required and explained in the detailed BOQ for each site, further in this document.

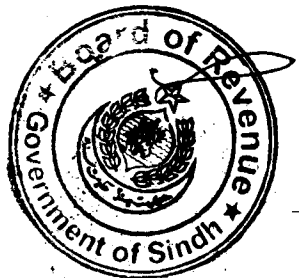
4.1.2.1.7 Platform

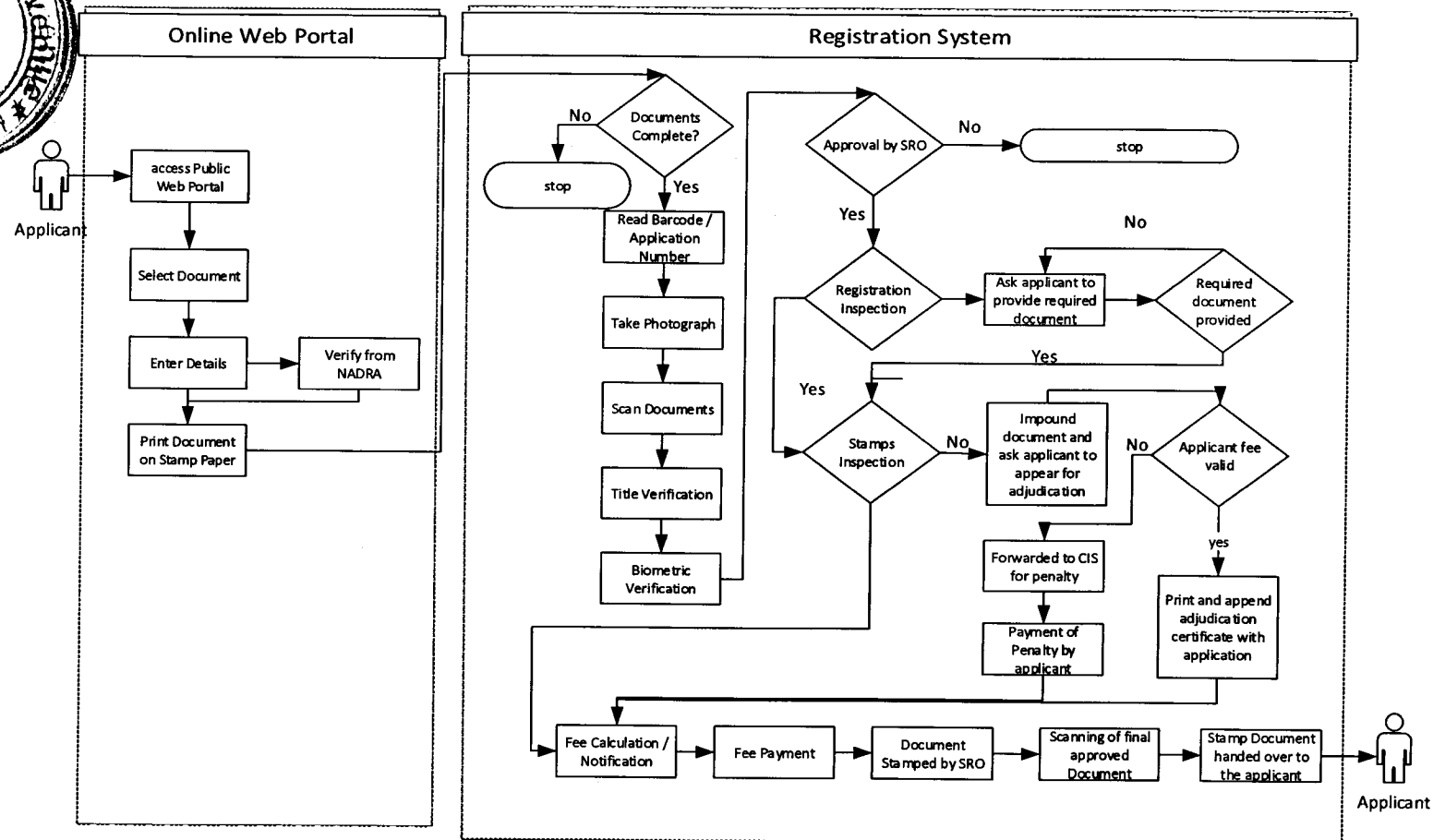
The latest version of Microsoft Datacenter Server edition will be used as operating system for all the servers while the database will be the latest version of Microsoft SQL Server Enterprise Edition.



4.1.3 General Process Flow

The e-Registration System software is expected to be deployed in two phases. The difference in phases is the integration of e-Stamping System. The general process flow of the application slightly changes after e-Registration System has become operational and is integrated with the e-Registration System.

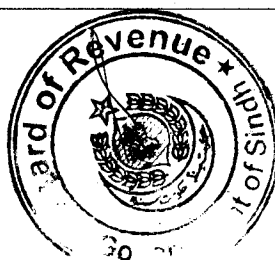




4.1.3.1 Phase 1:

Phase 1 refers to the fact that the e-Stamping System has not come online yet and the applicant will visit the SRO after physically creating, paying stamp duty and executing the document.

- The applicant applies online through the online web portal available over the internet.
- The user selects required document from a list and feeds information including the CNIC of the person for which the document is being created. If the original applicant is a foreigner, passport number and country of issuance will be mandatory
- For CNIC holders the portal shall only accept valid CNIC. This will be achieved by integration with NADRA system.
- The system checks the status of the property and only allows the users to proceed if the property is not banned.
- The applicant will print the document, execute it (means signing by all stakeholders) and pay all stamp duty. The system will issue a unique identity for the application and print QR Bar Code on the document along with date, time and other details. A receipt of this application will also be printed.
- The information is saved to the central database.
- The applicant then visits the SRO along with executed document and supporting documents.
- The first counter checks the documents for completeness and scans the unique QR Bar code which is printed on the application. The system fetches the record from the central database using the unique QR Bar Code. The operator takes photograph of all stakeholders/parties through a digital camera.
- The next step is document scanning. The system checks if supporting documents are available in the legacy database integrated with the central database. If not found, all documents are scanned as per their classification.
- The stakeholders/parties are then presented to the SRO for approval. The system performs the following tasks
 - Calculate fee for the SRO. The SRO may modify the fee.
 - Fetches relevant information from legacy database of the previous document





- Makes the biometric verification available with NADRA
- The SRO after all verification approves or disapproves an application.
- Approved applications are then forwarded for inspection who may verify the complete transaction. Two types of inspections are performed.
 - REGISTRATION INSPECTION: First the application is inspected by registration inspectors, if the application lacks any supporting document the application is impounded and an SMS is generated to applicant to provide the required document. After provision of required document and subsequent approval and comments by of registration inspector, the application is forwarded for second inspection.

The inspector for registration shall also verify the registration fee and other taxes calculated and verified by the Sub-Registrar. In case of an issue, the inspector can refer the case back to Sub-Registrar with remarks and comments.

- STAMP INSPECTION: In the second step the stamps inspector checks the application. If the inspector finds that the stamps duty is under paid or the physically pasted stamps are fake the document is impounded and an SMS is send to the applicant to contact CIS office. The applicant appears at CIS office, if the applicant proves that the stamp duty is fully paid as per rules, an endorsement certificate is printed which is attached with the application and the application is forwarded for further processing.

On the other hand, if the applicant hasn't paid the full stamp duty or the physically pasted stamp on the application are fake, the application is forwarded to Chief Inspector of Stamps (CIS). CIS is now responsible to put a penalty on the applicant. Once the penalty is paid by the applicant, the application is forwarded for further processing

- After successful inspection process, the system generates a fee voucher and forwards it to the bank for payment. The system also generates a notification for the applicant for payment of the same.
- The banking system automatically notifies the e-Registration System of the payment and the record is made ready for collection.
- The approving officer stamps the document and sends it to the scanning station

At the scanning station it is scanned as final approved title document. The original document is then returned to applicant





4.1.3.2 Phase 2:

The phase 2 of this system will be launched when the e-Stamping System will be online and integrated with this system. The following changes will be made to the process flow.

- After completing the online application system, the e-system with integration of e-Stamping system generate a fee voucher for the applicant.
- The applicant will have the option to pay the stamping fee voucher online, or through any other available banking means integrated with the system.
- No document will be printed at this time. However, the receipt will be printed.
- After payment of e-stamp voucher, the e-Registration System will mark the application ready for visit to SRO.
- The applicant/stakeholders/parties will visit the SRO as per the process and complete the registration process as per phase 1.
- After successful inspection and payment of registration fee, the approving officer will now print the document on a secure paper. The document will carry the paid details of both stamps and registration.

4.1.4 Software Components

The system will have the following major software components

- User Administration
- Library Administration
- Fee Administration
- Public Web Portal
- Registration System
- Auxiliary modules
- Management Information System
- Server end processes and services

4.1.4.1 User Administration

The complete system is governed by the user administration module. The user administration module is responsible for providing username and password based access to the complete system. This will eliminate the threat of SPAM User Registration as all user registrations will be manually blocked, as the administrator will authorize users to attain access to the system. The access is further governed by role based access system which defines every part of the system against roles. The roles are then assigned to users for access. A few of the roles defined by the system are as under:





- Reporting (Separate role for each type of report)
- Application Tracking
- Dashboards (Separate role for each type of dashboard)
- Stamp Inspection
- Registration Inspection
- Fee Manager
- Token Issuance
- Document Scanning
- Document re-scanning
- Biometric Capture
- Photograph capturing
- Approval (Sub-registrar)
 - Fingerprint verification of the Sub-Registrar (approver) will be conducted during user creation with NADRA. The verified fingerprint will be saved in the database. The system will perform a 1:1 verification from this saved fingerprint during approval of an application at the SRO.
- Will handling
- Refund
- Ban Property
- Property areas (district, tehsil, talluqa, mohalla, etc.)
- Etc.

For example, the user who only has role of reporting, cannot access the registration system. The user administration module will allow for the following functionalities in the system

- Add new user
- Modify user roles
- Ban user

4.1.4.2 Library Administration

The system provides to maintain several libraries for ensuring quality of data and standardization. These libraries can be modified and updated through the library administration system. The has the following libraries (but not limited to)

- Address library
- Document types
- Printable Document Templates
- Partner banks library
- Supporting document types
- Sites
- Application types

The precise number of libraries shall vary and depend on the outcome of the database design and SRS.





The system shall provide to add, modify and remove a library item.

4.1.4.3 Fee Administration

The fee administration module is responsible for creating the fee calculation formula for each type of application. The formulas are based on pre-defined parameters which will be set by the officer who has been assigned these roles. The parameters will depend on the property area divided as per the area library (district, tehsil, taluqa, mohalla) and the document being registered. The module will give options to add a new calculation rule against a document, modify the existing rule and remove a rule. The resultant value may be a percentage of a value or a fixed value. The total value is constituted as combination of multiple types of taxes and duties against a document.

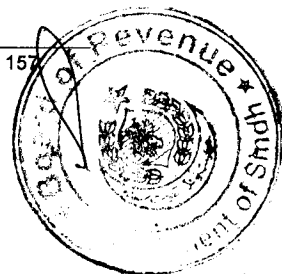
It is also possible that a document being registered does not pertain to any property area hence, fee administration will be set against document type only and no property area designation will be required.

4.1.4.4 Public Web Portal

The public web portal is an interface where general public can create document based upon pre-defined templates. An individual will have to create an account to access the system. The account user can create document for himself and other individuals. The applicant will select the desired form/deed from the pre-defined template. After providing the necessary information, the applicant will save the form and an auto generated unique application number will be issued against the filled form. If any of the parties in the document are Pakistan citizens, the CNIC numbers will be verified live with integration of NADRA service. In case of foreigner, the passport number and nationality will be accepted by the system. The applicant can print the document if the system is in phase of the process flow. The system will print a receipt for the applicant.

The portal shall provide the following features

- User creation and verification through CNIC and SMS by sending PIN.
- Ability to save incomplete applications and resume them at any time.
- Tracking of all applications created by the individual and history of completed applications.
- Option to accept processing fee before initiating any application. The processing fee can be paid online or through a FIXED voucher code generated by the bank and transferred to e-Registration System.





The system will integrate with the e-stamping system to calculate the e-stamp duty which the applicant can pay online (at the e-stamping system) or through any means provided by the e-stamp system.

In the first phase, the fee administration system will suggest the applicable fee against the document to be registered on the public web portal. The fee will be suggestive and will not be printed on the document in phase 1.

The public web portal will integrate with the online payment gateway for payment of registration duty generated later in the process. The payment will be made against the unique tracking number. An application tracking system will also be available for the general public to track the status of their applications.

The online portal will also host the interface for fee calculator. The interface can be used by public (without user creation) to assess their applicable taxes before initiating the application. The system will support multi-lingual data entry as explained in the designed features further in this document.

The system will be hosted on the web server at the central site.

4.1.4.5 Registration System

The registration system will be responsible for accepting applications applied through the web portal and processing them. The system processes each application through an automated workflow built in to the system. The system will have the following modules

4.1.4.5.1 Token Generation

This module is responsible for issuing token receipts to applicants as they arrive at the SRO. The process for token generation is simple and quick so there are no queues and lines at this station. The operator of this station shall simply read the barcode on the receipt brought by the applicant generated from the online system. The system shall fill-up all details from the central database and allow printing of the token receipt. The receipt shall have a sequential token number (reset everyday), date and time and name of the applicant. The exact details will be finalized during the SRS phase.

The token generation module will interface with a printer to print the receipts. The over-all process must not take more than 15 seconds.

This process will be configurable by the administrator. The module can be disabled for sites which have very few applicants. In that case, the "document check and photograph capture" module will be the first module to interact with the applicants.

4.1.4.5.2 Document Check and Photograph Capture





This is the first module where the applicant interacts with the registration system if the token generation module has been disabled for a site. If the token generation module is enabled, the module will fetch the next token in queue and display its "token number" on the screen to be called.

This module will feature two modes of data fetching if token queue is being observed

- Get data from queue
- Get data from tracking number

Both the features can only be accessed with two separate roles. If the user does not have the role of "get data from tracking number" only data from queue can be fetched and the queue cannot be by-passed.

If the "token generation module" is disabled, this module will accept the unique application number to initiate the process. Data will be fetched from the database and displayed. The module will interface with the digital camera and acquire applicant photograph. The software automatically transforms the picture into an ICAO compliant photograph with proper detection of eyes. The system will also offer features of rotate, brightness, contrast and crop to the operator. The process will be repeated for any other stakeholder as per the document. For example, if there is a sale agreement pictures of both buyer and seller will be captured. The system will integrate business rules as per requirements. For example, the presence of seller is mandatory while the buyer may not appear, these will be finalized during the SRS phase.

The process of software integration with the digital camera should be completely automated. The camera being proposed in the site hardware should be compliant with this solution.

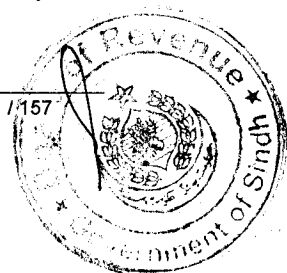
The module will save the record to the database. The system will automatically move the record for scanning as per the workflow.

DPA: This process will be conducted by the Data Processing Assistants (DPA's) who will verify that all information provided through the online system is correct. If changes are required, then the DPA's will make the required changes in the application. All information will be verified and corrected before photo capture.

4.1.4.5.3 Document Scanning

The document scanning system is integrated with the legacy database. A record to the system may be fetched through the queue or by entering the unique application number.

The document scanning module will check with the legacy database and retrieve relevant record. If the record is not present, all supporting documents may be





scanned. The number of documents may vary between 3 to 6, with 10 or more pages each. The system is integrated with an ADF scanner. The operator selects a document types from the pre-loaded document list and places the document (with multiple pages) on the scanner. The document scanning system, integrated directly with the scanner loads the document directly in the software as a PDF. One-by-one all documents are scanned and are finally saved to the database.

The document scanning module offers administrative features to add, delete and re-classify documents of existing applications. The module will ensure the optimal size of the document scanned and not rely on the setting of the scanning device.

This module will feature two modes of data fetching if token queue is being observed

- Get data from queue
- Get data from tracking number

Both the features can only be accessed with two separate roles. If the user does not have the role of "get data from tracking number" only data from queue can be fetched and the queue cannot be by-passed.

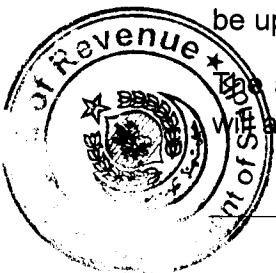
4.1.4.5.4 Approval

The approval module is responsible for the following functional features

- **FEE CALCULATION:** The system will calculate the fee based on the criteria set by the fee management system.
- **TITLE VERIFICATION:** The system will fetch the previous title from the legacy database and make it available for the approving officer to view. The system will display appropriate message if the search results are not successful
- **BIOMETRIC VERIFICATION:** The system integrates with the NADRA biometric verification service and allows the approving officer to verify the applicants through fingerprint verification.

The approval system will display the complete application package including scanned documents, NADRA data against CNIC and textual information captured. The system allows the approving officer to change the suggestive fee with comments. The approving officer will have the options to approve, reject or impound an application. The impound process will be followed as per SOP and the system will be updated with comments.

The approval module will integrate with the biometric fingerprint reader. The system will acquire live quality fingerprint for matching with NADRA BVS.





The application will also perform a 1:1 fingerprint verification of the SR (approving officer) with the fingerprint saved during user creation. The approving process will only complete if the fingerprint is successfully matched. This will ensure that the user login process is not misused for registration of documents. The fingerprint matching will be responsibility of the vendor.

The system will also calculate the age of the document execution automatically. The approving officer can also refer the case to DR with comments. This is done in the event that a document has lapsed the legal time limit for registration. The DR can then approve or disapprove the request with comments. Results of this decision will be displayed back to the SR. The SR can only proceed with approved documents.

All approved applications will move to inspection module as per workflow.

In Phase 1, the approval module will also be responsible for printing of registration certificate after the completion of inspection and fee payment by the applicant. The registration certificate template will be shared with the successful bidder. The one pager certificate along with the fee details paid by the applicant will be signed and stamped by the SR along with issuance of registered document.

This module will feature two modes of data fetching if token queue is being observed

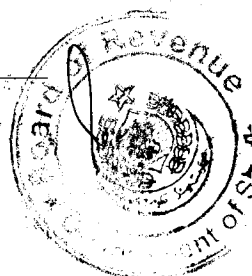
- Get data from queue
- Get data from tracking number

Both the features can only be accessed with two separate roles. If the user does not have the role of "get data from tracking number" only data from queue can be fetched and the queue cannot be by-passed.

4.1.4.5.5 Inspection

The inspection system will display complete information of the application along with decisions of the approving officer. It is pertinent to mention that the inspection activity will be conducted through a centralized mechanism, and inspectors will be placed at a location provided by the IGR office in coordination with the BoR. All registration documents will be viewed through an online interface by the inspections and hence forth the fee will be determined accordingly. After the fee is determined a SMS (Text Message) will be generated and sent to the applicant's designated mobile number informing the applicant of the fee payment and the modes of payment. The inspection officer will have the option to impound an application based on SOP, revert the application back to the approving officer or approve the inspection process.

The inspector can detain a document for field inspection. The field inspection process is manual and not part of the system. However, the report can be scanned and uploaded by the inspection system. The system should offer to upload multiple





images/pdf to a particular record being detailed/held at the inspection level. Based on this report the inspector can impound or clear an application.

The system will accept comments against each decision. Following two types of inspections will be conducted:

- Registration Inspection
- Stamp Inspection

This inspection will be conducted by the Inspector of Registration and Inspector of Stamps respectively.

Inspector of Registration: The Inspector of Registration is responsible for inspecting the required documents and have the authority to impound the document as per the prevalent SOP if all supporting documents are not furnished by the applicant, the applicant will be told to appear for adjudication, furthermore the application will be sent back to the approving officer. If all criteria's are met the inspector of registration will forward the application to the inspector of stamps.

Inspector of Stamps: The inspector of Stamps assess the amount of stamp duty paid and makes sure all applications received have been appropriated with the required stamp duty and moreover if the physical stamps are genuine. If anomalies occur in the inspection findings the application will then be impounded.

4.1.4.5.6 Impound

The impound functionality will enable the inspector/SR to impound the application as per SOP and revert the application back to approving officer. The application can be impounded for the following reasons

- Deficiency of required document
- Stamps duty is under paid
- Fake physical stamps pasted on application

4.1.4.5.7 Document Printing and archiving

The document printing system will be deployed in phase 2 of the workflow. After the applicant has paid the fee through banking system, the banking system will notify the e-Registration System which will place the application in printing queue. The document printing module will pick an application from the queue and feed the serial number of the secure document. The secure document will be provided by the stamping system. The document will be printed on the secure printer. The document will contain all details of e-stamping and e-registration payments along with content of the document. This document is stamped by approving officer and is sent to scanning station for archiving. The final approved version of the title document is scanned and archived in the system. The original document is then returned to applicant.





Note: after inspection the server-end processes are engaged. They are responsible for generating fee vouchers and transfer to banks for payment. This is explained in the relevant section.

4.1.4.5.8 Auxiliary Modules

4.1.4.5.8.1 Refund management System:

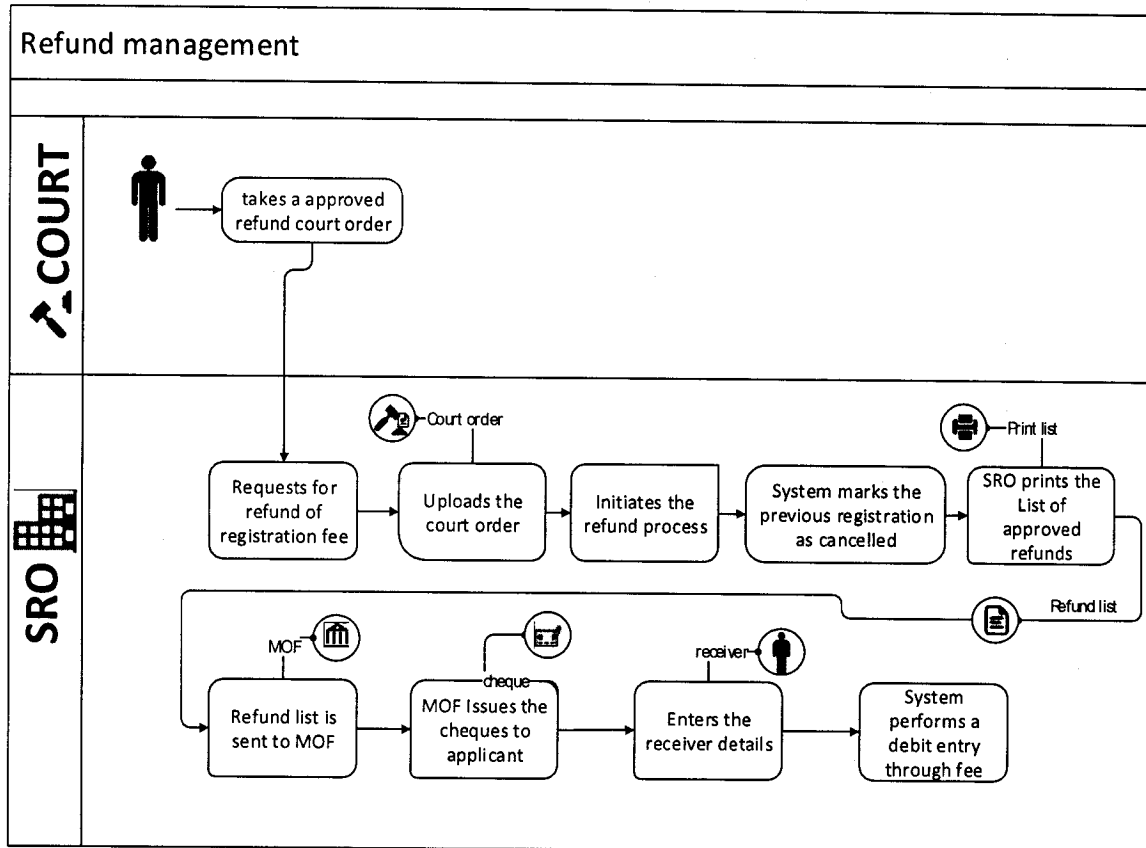
The refund management module will enable the authorities to refund the fee to the applicants where the relevant approved court orders are available.

The authorized user will upload the approved court orders and the system will mark the registration as cancelled. Hence making the previous registration number valid for the title document.

The system will allow the user to take a printout of the approved refunds, containing the unregistered property numbers, valid previous registration Number, Applicant Name, cheque Number etc. This printed list of the refunds will be sent to Finance Department, where the approval of the refund will take place. After which the cheques addressed to the applicants will be returned to the SRO.

These cheques are distributed to the applicant after the user enters the receiver details i.e. receiver's Name, CNIC and address in the system. After the successful delivery of the cheque to the applicant, the system will make a debit entry through the fee management System. System maintains complete activity logs during refund operation.

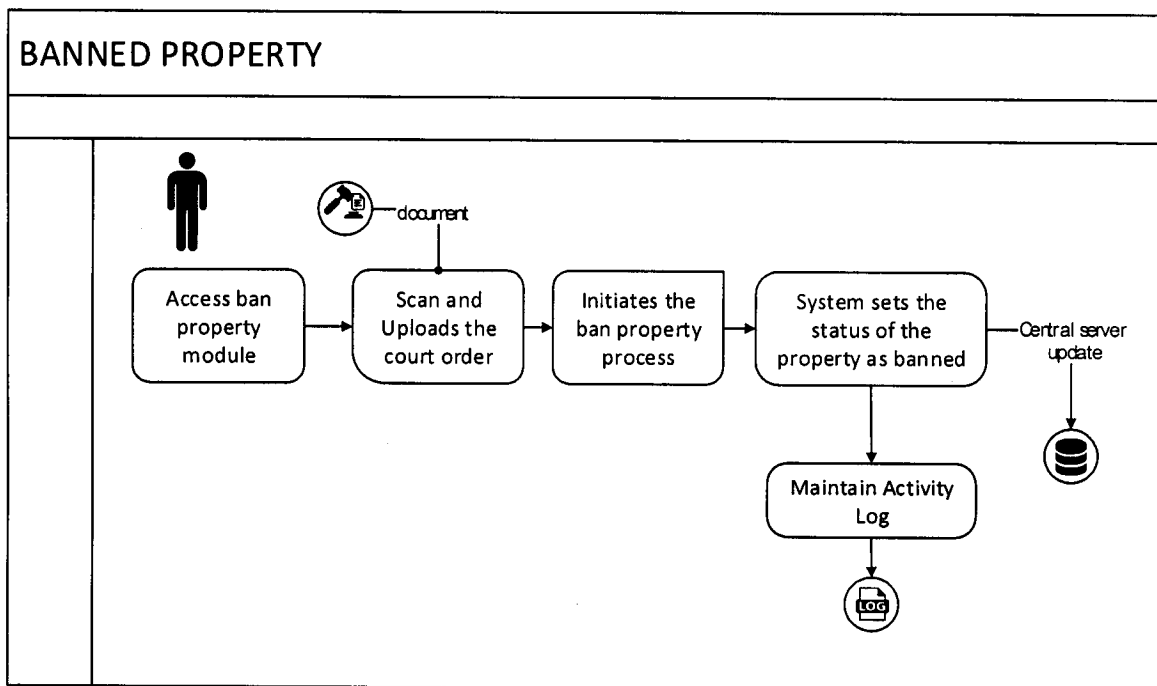




4.1.4.5.8.2 Ban Property:

The functionality provided by the system allows the administration to ban a specific property. The system will only allow the authorized user to proceed with this operation, if the court orders are present. The user will upload the required supporting documents and mark the registry as banned. The application will generate detailed audit logs of each ban property activity.





- NOTE: When applying on portal (other than CTC), the system checks the status of the property and only allows the users to proceed if the property is not banned.
- The user CTC of the banned property will be provided with an additional note stating that the property is banned

4.1.4.5.8.3 Certified true Copy-CTC Module

The CTC module is responsible to provide Certified True Copies of registered documents to interested individuals. CTC can be acquired either from SRO office or from public web portal. In both cases the details of applicant (CNIC, Name, Address), CTC mode (Online, SRO Office), registration number and the CTC Label (confirming that the document is the certified true copy) is printed on the certificate.

The applicant will apply for CTC online through the public web portal available over the internet. The portal will acquire applicant details and registration number of the property for which CTC is desired.

After successful submission of application, it is forwarded to CTC officer for approval and fee calculation.

The CTC officer verifies the application and provides fee information.

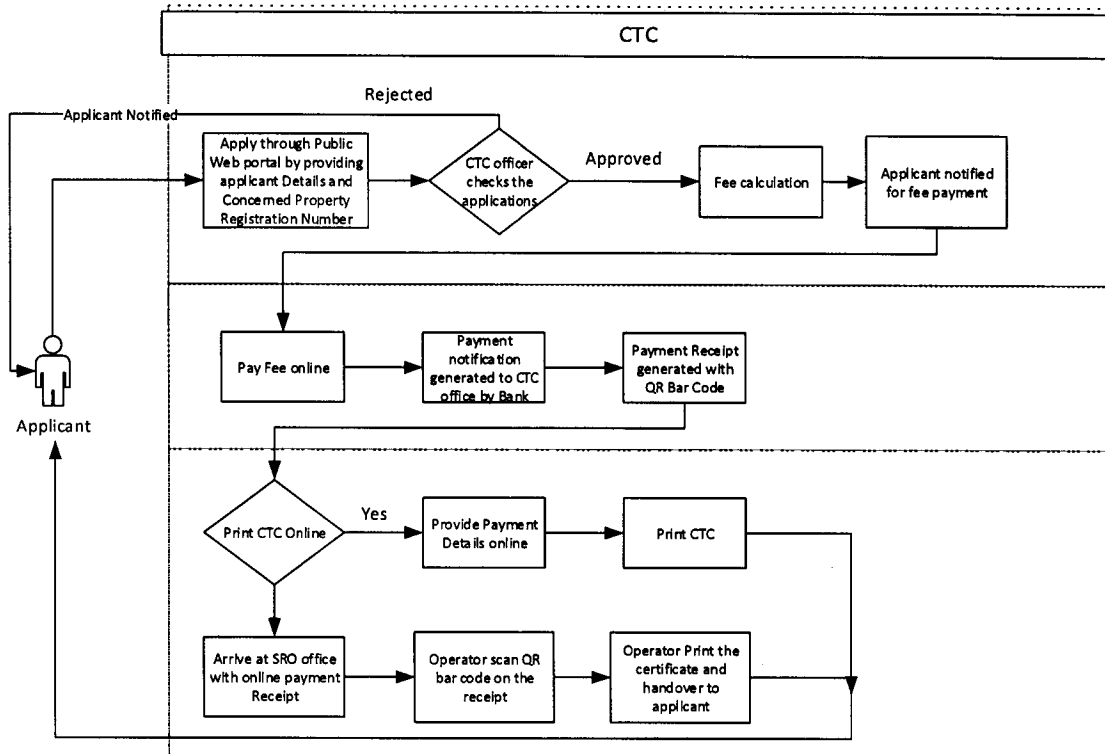
The applicant is notified through SMS about fee. The applicant pays the fee online and can either print the CTC certificate or can go to SRO office to get a print of the CTC certificate after showing fee receipt.

NOTE:





In case the property is banned, the applicant would be prompted appropriately that CTC for such property cannot be provided.



4.1.4.5.8.4 Will Handling Module

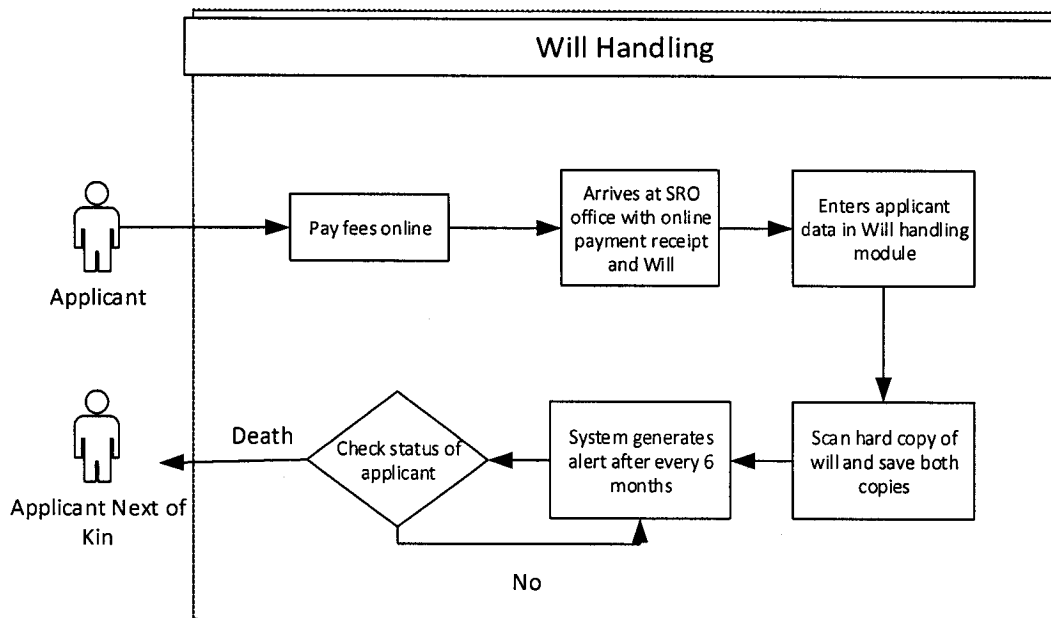
The individuals interested in securing their will document and want to hand it over to suggested person(next of kin) through the authorities can avail this.

The applicant will pay online fees for will handling service and arrives at office. The officer receives the will document and the payment receipt. The officer enters applicant data in will handling module and also scans the document before keeping it at a secure location. During will-submission only the cover of the will be scanned since the will may be enclosed and secret.

The will may be withdrawn by the applicant or may be opened after his/her demise. The document will be scanned and the photograph and biometrics of the person receiving the will document will be captured and verified respectively.

The module generates alerts to the authorities after every 6 months to verify the status of the person. If the applicant status is confirmed dead, his will document will be delivered to the authorized person advised by him.



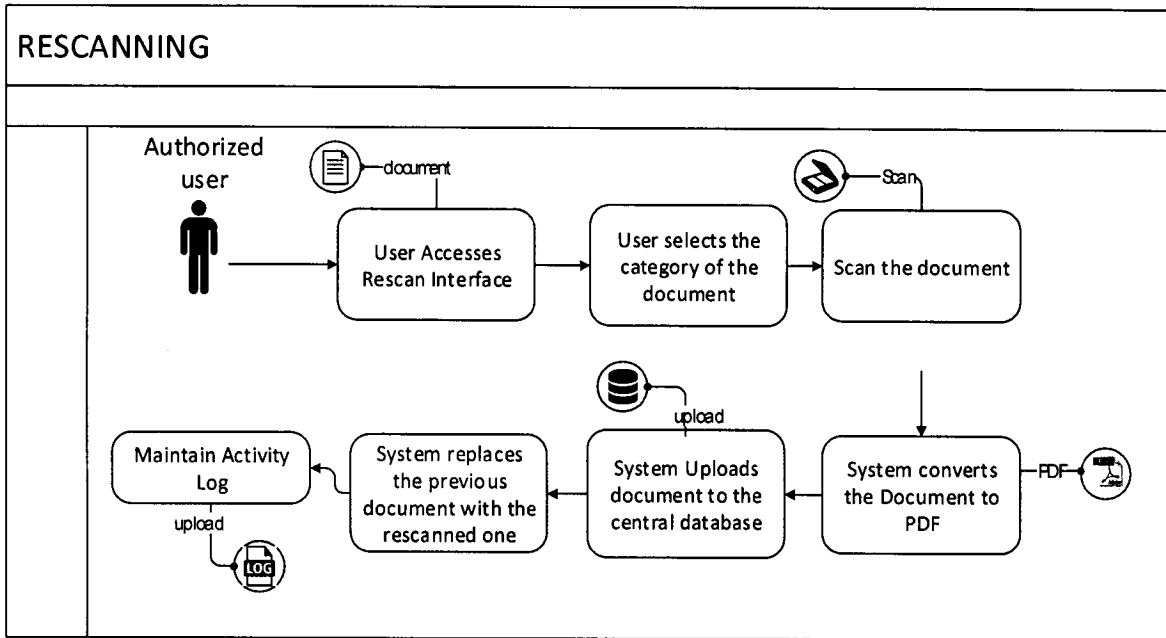


4.1.4.5.8.5 Re-scanning sub-Module:

The rescanning module is an interface that allows the authorized user to rescan the documents according to their classification. Resultantly, the system shall replace the existing scanned documents with the rescanned document. The previous record will not be deleted but archived with appropriate remarks and notes.

The application generates detailed audit logs of each rescanning activity. This will include document category, user details and date and time. The logs are secured and are transmitted with each record to the central database.





4.1.4.6 Management Information System

The Management Information System (MIS) is a web-based portal hosted and accessed within the private network.

The MIS is a combination of the following sub-modules (but not limited to)

- Reporting Module
- Dashboards
- Application Tracking System
- Verification System

4.1.4.6.1 Reporting Module

The reporting module is responsible for preparing reports for all tiers of management. The following reports are part of the reporting module (not limited to)

- Region wise performance reports
- Site wise performance reports
- Audit reports
- Financial reports
- Rejection reports
- Impound reports
- Adjudication reports
- Refund reports





Each report is accessed through a separate role which can be assigned to users. All reports are parameterized through date, user, location/site and document type. The reporting module will have the option to

- Export a report to pdf or excel format
- Prepare printer friendly version of the report
- Capability to generate ad-hoc reports

The system will have a maximum of 50 reports.

4.1.4.6.2 Dashboards

A single dashboard with almost 20 types of graphically representable reports/information units will be developed. Each of these reports/information unit will be represented by a user role. Hence, a user can view only that part of the dashboard which he is allowed to through one or more user roles assigned to that username.

Each information unit may refer to the reporting system for detailed summary of the information presented in the dashboard.

4.1.4.6.3 Application Tracking System

The application tracking system displays status of an application. The system also displays complete information along with the status of the report.

4.1.4.6.4 Verification System

The verification system is an interface to verify registered documents. The system allows search through multiple parameters (not limited to) such as

- CNIC
- Document title
- Application number

In addition to internal users and inspectors the system can be extended to external stakeholders for verification of registered documents.

4.1.4.7 Server-end Processes and Services

Several server-end processes will be deployed to service the other sub-systems and complete automated processing. Since the system has a centralized architecture and no local server is available at the remote sites, the transactions between remote sites and central site will be done through a host of services. The system level integration with internal and external systems will be done through server-end threads and services.





These services and processes/threads are working un-manned and continuous. The requests are processed on queue basis with each capable of handling multiple requests at the same time.

The following processes and services will be deployed at the central system.

4.1.4.7.1 Transaction Services for Registration System

All modules of the registration system will interact with the central database through deployed web-services. The communication will occur on a private network and will be further secured through security parameters described further in this document.

4.1.4.7.2 Fee Processing

This thread is responsible for calculating fee according to fee administration table on requests from the registration system.

4.1.4.7.3 Fee Voucher Generation

After finalization of fee and inspection, a fee voucher is generated in the system through this process. Each fee voucher is generated with a limited expiry date before which it must be paid.

- Integration with Banking System
- The integration with banks is done on the following basis:
- Transfer of fee vouchers to banks
- Receive confirmation of payment from banks
- Transfer cancellation of unpaid fee vouchers
- The processes are completed on service based communication architecture over secured network

4.1.4.7.4 Integration with Online Payment Gateway / e-Commerce

The solution would provide the applicant the option to pay through an online payment mechanism or an online payment gateway which would accept all credit cards backed by VISA or MASTERCARD. The required fee after adjudication would appear on the client's portal and this would also be sent via an SMS to all applicants after inspection. The applicant would then be able to make the required transactions by following the following steps:

- Login to the Online Portal
- View required fee
- Select payment method (VISA or MASTERCARD)
- Enter Credit Card information and Process Transaction

After the above steps are completed and payment is successfully processed the applicant would receive a confirmation (email preferably sent to applicant).





4.1.4.7.5 Integration with e-Banking Solution

The applicant would also be able to make a payment utilizing e-Banking services after receiving an SMS with their application Tracking ID. This would be processed by the preferred third party vendor which is selected.

- Receive SMS for Payment
- Make Payment at preferred vendor franchise
- Receive confirmation of successful payment submission.

The processes are completed on service based communication architecture over secured network. All contractual obligations with third party payment solutions to be a minimum of 3 years.

**Note The integration will be developed as per type of banking solution being integrated rather with each bank separately. For example the Middle-Ware for integrating branchless solution shall cater to be connected to all branchless solution offering banks. The same interface will just be required to be connected to the bank through a network*

4.1.4.7.6 Integration with NADRA

The integration with NADRA is performed on the following basis:

- CNIC verification for web portal
- Biometric verification for approval module

4.1.4.7.7 Integration with LARMIS

The integration with LARMIS is done on the following basis:

- Data is fetched from LARMIS database on the basis of survey number
- Each data is recorded in the central database with reference to survey number in LARMIS database.

4.1.4.7.8 Integration with the Legacy Database

The integration with legacy databases is done on the following basis:

- All the record will be fetched from the legacy database on the basis of registration number

4.1.4.7.9 Integration with G.I.S

An integration will be developed between the existing G.I.S. system and proposed e-Registration System. The interfaces will be deployed as web services.





4.1.4.7.10 Integration with E-Stamping System

The integration with E-Stamping System (Phase II) is done on the following basis:

- Unique Tracking Id generated will be referred by both the systems

4.1.4.7.11 SMS Service

SMS notifications will be generated by the system during processing of the application. The applicant is notified at following key indicators:

FEE VOUCHER: The applicant is sent an SMS to notify him to submit fee. The message sent may include:

- Fee code
- Tracking ID
- Payment mode
- Applicant Name

IMPOUND: The applicant is sent an SMS to notify him that the application has been impounded and he may apply for adjudication. The message sent may include:

- Tracking ID
- Impound reason
- Applicant name

The SMS module will also be responsible for generating SMS for tracking requests received. The tracking request shall contain the unique tracking number and the response shall contain the current status of the application in the system. The module will integrate with the SMS gateway interface, also being provided by the bidder.

The SMS module will also be responsible for generating verification SMS against requests received through the SMS gateway interface. The verification service will be used to verify registered documents.

The format of all broadcast and response messages will be finalized in consultation with the procuring entity during SRS phase.

4.1.4.8 Security

After system development, system security is at the core of running successful operations. Since it is going to be a multi-tier application with one component exposed to the internet and remaining component over the secure intranet. Regardless of the exposure, following are the guided principles and security features embedded in the application to safeguard against multiple vulnerabilities.





4.1.4.8.3 Authorization

Authorization is the process of determining access control. Since it is a role based model where every user is assigned a role and access of the system is determined by the role assigned to the logged in user. After authentication – both in state full and state less transactions, user roles are checked. Be it a web page or a web service call, user must have a role assigned to him/her by the system administrator. A user may have multiple roles at the same time that will allow more access to the system. In this case URL rewriting will be used so that user may not enter the page directly in the URL. Only one administrator will be allowed to change role access of the system.

4.1.4.8.4 Securing Data Transmission

Since data is to travel on transport layer, it needs to be encrypted. For security purpose, data will be double encrypted with master and client a symmetric key pairs. Since this is an expensive operation and data size plays an important role in encryption with asymmetric keys therefore, for performance reason an extra step will be introduced. This will involve the encryption of data with a symmetric key (AES 128 bit). After encryption, the symmetric key itself will be encrypted with the private key (RSA 1024 bit) of the client. This encrypted data will again be encrypted with the public key (RSA 1152 bit) of the server. Both the encrypted key and the encrypted data will be concatenated and transmitted over the transport layer. Once it reaches the server, first the key and data are separated. Key is decrypted with the private key of the server and then further decrypted with the public key of the client. This will give the actual symmetric key that will be used to decrypt the data.

For each transaction a new symmetric key will be generated and sent along the message in such a fashion where the key can't be decrypted. In the worst case scenario even if one packet is hacked, it will only compromise one packet with no context and the next payload will bring a new session key.

4.1.4.8.5 Prevention from Vulnerabilities

The following section will briefly walk through the known vulnerabilities and their prevention in the system.

4.1.4.8.6 Injection

Injection attack is the top most attack in the OWASP top 10 categories where arbitrary data is injected in the application resulting in either compromise of the confidentiality of the user data stored in the DB through SQL injection or in some cases, it can result in the full compromise of the server machine (through SQL and command injection vulnerabilities).

Throughout the application, prepared statements will be used to ensure data is treated separately from the application code. Further, the server side will be implemented in java that is a strongly typed programming language to ensure the





4.1.4.8.1 General architecture/policy level features

Since it's a service based architecture, all the communication on network layer will be done on secure socket layer (SSL). That will ensure there is no data manipulation done during the traveling between two ends – either it be client to server or vice versa.

4.1.4.8.2 Authentication

Authentication is the process of identity verification. If any client tries to login the system, the server first needs to validate the authenticity of the logged in user. All the passwords are kept in databases using one-way hash (MD5). The web module that is exposed on the internet uses three credentials at the time of login – username, password and salt. All three parameters will travel back to the server in plain text. At the server, salt will be added to the password and the whole lot will be hashed to compare with the hashed password. Captcha will be used to ensure that programmatic attempts are not made for brute force password hack.

The application that will run on intranet – the web services will use username and password for authentication. To further strengthen the system security, following policies will be implemented

- To prevent a user id and/or password from being hacked, failed logins will trigger a lock-out after a determined number of attempts. The account lock-out will be maintained for an hour to prevent and discourage the attacker from reissuing the attack. All login attempts will be logged with IP adders of the client.
- All authentication attempts will be logged – log in, log outs, failed logins, password change requests.
- Notification or alerts will be sent to an administrator when the account is locked due to failed logins.
- Strong password rules will be applied. A strong password has a minimum of seven characters and it uses three of the following: numbers, upper case letters, lower case letters, and symbols. A strong password will not use repeated or sequenced characters. It will look random.
- All passwords will have expiry time and after that the user will be forced to change password.
- Password change will require the existing password to be entered prior to accepting a new password. It is important to verify that the owner of the user id is the person requesting the password change. When passwords are successfully changed the program will forward a message to the email address of the owner of the user id.
- A forget password functionality should be provided in case of account retrieval. An email would be required to be generated to the users registered email address displaying the User ID registered to the email address. Furthermore this email will contain a secure link which will enable the user to change their password.





type safety of the application and mitigate threats such as insecure object references.

4.1.4.8.7 Cross Site Scripting (XSS)

Cross Site Scripting (XSS) results in arbitrary JavaScript and VBScript execution in the context of the user browser. According to OWASP top 10 categories of web application vulnerabilities; this is the second most prevalent class of web application vulnerabilities.

Application will ensure that all the user input data is validated and encoded properly before storing and consuming. Further, the application will adhere to Content Security Policy (CSP) at the server layer to ensure that all the dynamic contents such as scripts, images, CSS, and fonts etc. are loaded from only trusted and white-listed locations.

4.1.4.8.8 Failure to Restrict URL Access

A custom developed technique will be used where a spider (a piece of software which scan and record all the links of the web application) is run from an administrative account and the results are recorded. Once it is finished, the result is given to the same spider with a user privilege to ensure all the administrative areas of the application are properly protected. If a user-level spider is able to crawl the administrative URL, it is reported to the analyst and prompt action is performed by the developer to mitigate the vulnerability during the development stage of the application.

4.1.4.8.9 Insufficient Transport Layer Protection

With the development of easy to use Man-In-The-Middle (MiTM) offensive security tools, sniffing of user data over the wire is an easy attack that can be performed with relative ease even by the novice attacks.

It is ensured that the application is always accessed over TLS (commonly known as HTTPS) in order to protect the user data during the transit. Even if a user tries to access it over an insecure protocol such as HTTP, the request will be automatically redirected to the HTTPS. Also, confidential data such as authentication cookies are marked "secureOnly" to ensure that even if a malicious JavaScript code tries to transfer the cookie over HTTP, it will result in failure.

4.1.4.8.10 Insecure Direct Object Reference

All the GET and POST parameters are hashed by the server before sending it to the client's browser. Once the response is received, the first task the server performs is to validate all the submitted parameters with their hashed values stored at the server. This ensures that not only is the data stored during the transit (through





HTTPS) but the data is secure even in the user browser and temper is detected before any processing is performed by application.

4.1.4.8.11 Cross Site Request Forgery

Cross Site Request Forgery occurs when a user browser performs a privileged action on one application in the context of another application. This attack requires either an XSS or some type of a social engineering attack such as spear phishing.

All the privileged operations are protected through a randomly generated anti-CSRF token which is hidden in the page. When the user submitted the response, the application ensures that the response is the result of an actual previously submitted request from the user browser by comparing the anti-CSRF token received from the user with the value stored on the server. This technique protects all the privileged operations in the application against the CSRF attacks.

4.1.4.8.12 Invalidated Redirects and Forwards

By protecting the application against cross site script and CSRF vulnerabilities, it is ensured that the user will always remain in the scope of the application and no request will result in the user browser loading a resource from a malicious outside domain.

Further, JavaScript which is the primarily means through which the invalidated redirects and forwards are performed, are strictly controlled through the Content Security Policy (CSP) as previously outlined.

4.1.4.8.13 Broken Authentication and Session Management

User authentication and Role Based Access Control (RBAC) are the cornerstone of any authentication scheme. We will ensure that all the user authentication tokens are tracked at the server side where the authentication token received from the client in the HTTP cookie header is first authenticated before giving them any kind of access over the application. (Please refer to previous section for further details)

4.1.4.8.14 Security Misconfiguration

Continuous vulnerability assessment and penetration testing of the application ensures that security misconfiguration and vulnerabilities discovered on a daily basis are patched in a timely manner. Further, WAF (Web Application Firewall) rules provide virtual patching of the application where even if the end application is vulnerable, WAF will protect it against exploitation by proactively monitoring all the received data from the client side.

4.1.4.8.15 Insecure Cryptographic Storage





We ensure that whenever a cryptographic operation is performed such as encryption or authenticated hash, it results in a strong cryptographically protected data. Also, key management is performed during the whole life cycle of the application for timely disposal of the key material as soon as it is not needed by the application.

All the modules in the system shall have the capability to display all labels and static information on Graphic User Interfaces in Urdu, Sindhi or English Languages. The data capture system shall be equipped with three language packs. The officer shall have the option to select any language on the fly during the course of entry. The fields shall support Unicode therefore no change of form layout will be required for entry of different languages.

4.1.4.9 Design Features

4.1.4.9.1 Multilingual Support

The online portal which supports printing of documents should have the option to allow data entry in three languages; Sindhi, English and Urdu. Some fields which will be used for identification of property, calculation of relevant taxes and owner/party information such will be accepted in English in case the document language is Sindhi or Urdu.

It will be the responsibility of the bidder to arrange and integrate appropriate (formally accepted by the procuring entity) fonts in the web application.

All dates and numbers will be in English. The system should also support printing of the same font at different levels.

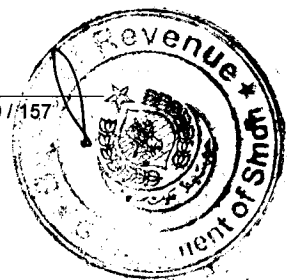
4.1.4.9.2 Scalability

The e-registration application will be designed as vertically and horizontally scalable. This shall allow, the complete registration system to be deployed on a single machine, or each stage (e.g. document scanning) on multiple machines.

The feature will assist processing of applicants who cannot appear in person at the SRO. The complete system of the SRO will be deployed over a mobile kit (laptop, etc.) and taken to the person who cannot appear due to a valid reason. The system will be connected through the wireless dongle which connects the mobile kits to the central system over private network.

4.1.4.9.3 Scanned Document Features

The documents are scanned at various steps of the E-registration application with following features:





- 200 dpi colored scan of each document such that each image is less than 1 MB

4.1.4.10 Technology and Platform

The complete system will be developed using Microsoft Technologies and will hosted on Microsoft platform.

4.1.4.11 Deliverables

4.1.4.11.1 Development of SRS

- To develop a Software Requirements Specification (SRS) including Functional, Non-functional and Technical Specification for e-Registration System based on the "To-Be" Process proposed by M/s NADRA.

4.1.4.11.2 Development of ER Diagram

- To design the database as per the requirements identified and finalized in the SRS

4.1.4.11.3 Software Development

- To develop error free e-Registration System with MIS Reposts based on the SRS approved by Board of Revenue Sindh,

4.1.4.11.4 System Integration Testing

- To perform SIT (System Integration Testing). Upon successfully completion of SIT the bidder shall share the Test Result with Board of Revenue, Sindh.

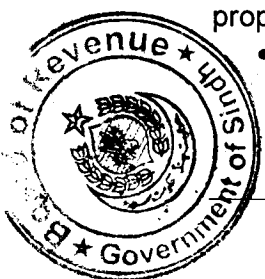
4.1.4.11.5 User Acceptance Testing

- To conduct Pre-UAT (User Acceptance Testing) Training of e-Registration System to Business Users of Board of Revenue Sindh. The training should be comprehensive and shall address the Board of Revenue Sindh, Business users and system operators to operate the e-Registration system independently from the vendor.
- To Assist Board of Revenue Sindh on conducting User Acceptance Testing of e-Registration System.

4.1.4.11.6 Training

Upon successfully completion of UAT, the bidder is required to submit a training plan that shall ensure adequate transfer of knowledge and skills required for correctly operating the project independently from the vendor. The bidder is to provide a proposal that shall have the training designed into three major stages:

- Pre-installation Training – This shall cater for the Board of Revenue Sindh Technical staff i.e. System administration & specialized equipment





- Installation Training – This shall also address the Board of Revenue Sindh Technical staff i.e. System administration & specialized equipment
- Post-Installation Training – This shall address the Board of Revenue Sindh Management, Technical staff, general users and system operators

4.1.4.11.6.1 Training Delivery

The training on the system will be provided as follows:

- Participants must at the end of the course be able to train other users in the standard use of the system.
- The training should be planned so that there is minimum disruption of work.
- Training should be comprehensive.
- Training should be scheduled with the availability of equipment to allow staff to put their newly acquired skills into practice.

The following information should also be provided by the bidder:

- Cost of training
- Number of training sessions required
- Duration of each training session
- Target participants and pre-requisite qualifications

4.1.4.11.7 Software Deployment

- Upon successfully completion of Training, the bidder shall deploy e-Registration system to SRO as first pilot run.
- Upon successfully completion of first pilot run, the bidder shall deploy e-Registration system to 3 SROs as second pilot run.

4.1.4.11.8 Phased Rollout

- **Phase I:** Upon successfully completion of first and second pilot run. The bidder shall deploy e-Registration system to all SRO in Karachi as first phase rollout.
- **Phase II:** The bidder shall deploy e-Registration system to all SRO in Hyderabad as second phase rollout.
- **Phase III:** The bidder shall deploy e-Registration system to all SRO in rest of Sindh province.

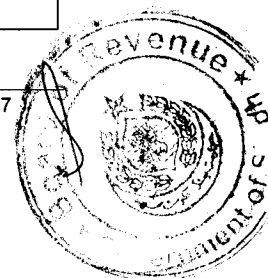
4.1.4.11.9 Post deployment Support

- The Successful Bidder is required to depute adequate personnel to oversee the post deployment support of one year by the vendor and advise the BOR in such matters during this time period.

4.2 Central Site and Disaster Recovery Site Hardware

4.2.1 Summary

Sr. #	Description	Quantity
1	Storage (40TB useable)	02
2	Blade chassis with 08 blades	01
3	Rack mounted Server	03





4	Tape Library	01
5	Backup Software (capacity based Licensed)	01
6	Antivirus with 500 clients	01
7	SSL certificate	01
8	Microsoft SQL Server Enterprise Edition with HA availability & disaster recovery	Pri =32 Core (16+16) DR= 16Core
8 (a)	Microsoft OS Licenses for DB servers	48 Core (physical Machine)
9	Application Load Balancer	02
10	Windows Server License with hypervisors and unlimited VMs	192 physical cores (24Cores each server)
11	Windows CAL Licenses	500
12	Mobile Kits	15
13	SSL VPN Concentrator Solution	1
14	FC Switches	2

4.2.2 Technical Specifications (Primary site solution)

Component	Min. Requirement
Blade Chassis - Technical Specs (BOQ Qty=1)	
Form Factor	Enterprise Blade Chassis house min 8 Blades.
DVD/CDR/USB	Internal Ultra Slim Enhanced SATA Multi-Burner or external usb DVD reader/writer ,USB
Power Modules	The enclosure should be populated fully with power supplies of the highest capacity available with the vendor. Power supplies should support N+N as well as N+1 redundancy configuration, where N is greater than 1.
Cooling	Each blade enclosure should have a cooling subsystem consisting of redundant hot pluggable fans or blowers enabled with technologies for improved power consumption and acoustics
IO Module	Redundant Management Modules with full KVM functionality integrated in the chassis. Redundant Ethernet Switch which has Layer 2 and 3 switching and routing capability. Minimum 4 external ports 1Gband 2 ports10Gb. 2 x 6 active external port SANFC Switch (16gbps) or equivalent as per solution.
Midplane	Chassis should have a highly reliable passive mid plane for providing connectivity of the shared resources to the compute nodes in a highly reliable manner. Proposal must have description

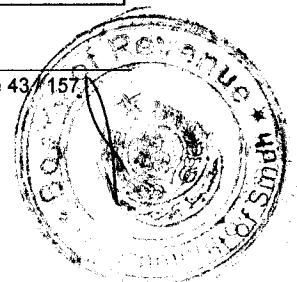




Component	Min. Requirement
Multiple Platform	Should provide support for multiple platforms in x86 servers within the same enclosure.
Management Modules	Solution Should provide management capabilities to manage controlling Power, Fan management, Chassis and compute node initialization, Switch management, Resource discovery and inventory management, Resource alerts and monitoring management, Chassis and compute node power management and diagnostics for elements including Chassis, I/O options and compute nodes
Cables & Accessories	All Relevant cables such as (LC-to-LC fiber cables) to completely implement the solution with all aspects
Integrated management Module	The proposed solution should have an Integrated management where integration of Servers, Storage, Networking and other available hardware resources in the solution are managed using a common GUI
Warranty & Support	3 years comprehensive Hardware and software warranty with 24x7 6-Hour Call to Repair Supportback to back OEM support.
Firmware provisioning Stack	Manage Firmware across entire hardware stack.
Other	All FC & Network cables must be provided by the vendor as per the solution, Compliance sheet must be attached for chassis and Nodes Implementation needs to be done by vendor and must have office & certified human resources(at least 2) available in Karachi. Spare parts depot must have in Karachi.

Total Blades (Compute Node) Quantity = 08

Compute Nodes - Technical Specs - (Qty=2) (Database servers) for Above Blade Chassis	
CPU	2x8 Cores Intel E5-2600 v4 series (or Latest) minimum 2.0GHz or higher clock speed processor but cores should not be exceeded.
Memory	128GB RAM DDR4 LRDIMMs or RDIMMs , scalable up to 1TB (min 16 Slots)
SCSI Controllers	Integrated Hardware Raid Controller to supports Hardware Raid RAID 0,1
Disk Drives	Disk Drives 2 x 600GB 12Gbps 10K SAS Hard Disk Drive or Higher
Graphics	Graphics Controller 16MB
Ethernet Adapter	Server should be configured with 2-port 10 Gb Ethernet Adapter, Computer node should support FCOE and ISCSI





	functionality on demand
Fiber Channel HBA Connectivity	1x Dual Port 16Gbps Fiber Channel adapter
Warranty & Support	3 years comprehensive warranty with 24x7 6Hour Call to Repair Support.
Failure Alerting Mechanism	Failure Alerting Mechanism The server should be able to alert impending failures on maximum number of components. The components covered under alerting mechanism should at least include Processor, memory and HDDs
Compute Nodes - Technical Specs (Qty=1) (Application Server) for Above Blade Chassis	
CPU	2x12 Cores Intel E5-2600 series minimum 2.2GHz processor or higher
Memory	128GB RAM (DDR4 LRDIMMs or RDIMMs), scalable up to 1TB (min 16 Slots)
SCSI Controllers	Integrated Hardware Raid Controller to supports Hardware Raid RAID 0,1
Disk Drives	Disk Drives 2 x 600GB 6Gbps10K SAS Hard Disk Drive.
Graphics	Graphics Controller 16MB
Ethernet Adapter	Server should be configured with 2-port 10 Gb Ethernet Adapter, Computer node should support FCOE and iSCSI functionality on demand
Fiber Channel HBA Connectivity	1x Dual Port 16Gbps Fiber Channel
Warranty & Support	3 years comprehensive warranty with 24x7 6Hour Call to Repair Support.
Failure Alerting Mechanism	Failure Alerting Mechanism The server should be able to alert impending failures on maximum number of components. The components covered under alerting mechanism should at least include Processor, memory and HDDs
Compute Nodes - Technical Specs (Qty=1) (Backup server) for Above Blade Chassis	
CPU	2x8 Cores intel E5-2600 series minimum 2.0GHz processor or higher processor
Memory	128 GB RAM (DDR4 LRDIMMs or RDIMMs), scalable up to 1TB (min 16 Slots)





SCSI Controllers	Integrated Hardware Raid Controller to supports Hardware Raid RAID 0,1
Disk Drives	Disk Drives 2 x 600GB 6Gbps10K SAS Hard Disk Drive.
Graphics	Graphics Controller 16MB
Ethernet Adapter	Server should be configured with 2-port 10 Gb Ethernet Adapter, Computer node should support FCOE and ISCSI functionality on demand
Fiber Channel HBA Connectivity	1xDual Port 16Gbps Fiber Channel
Warranty & Support	3 years comprehensive warranty with 24x7 6Hour Call to Repair Support.
Failure Alerting Mechanism	Failure Alerting Mechanism The server should be able to alert impending failures on maximum number of components. The components covered under alerting mechanism should at least include Processor, memory and HDDs
Compute Nodes - Technical Specs (Qty=1) (Monitoring /Web server) for Above Blade Chassis	
CPU	2x12 Cores intel E5-2600 v4 series minimum 2.2GHz processor or higher
Memory	128GB RAM (DDR4 LRDIMMs or RDIMMs), scalable up to 1TB (min 16 Slots)
SCSI Controllers	Integrated Hardware Raid Controller to supports Hardware Raid RAID1
Disk Drives	Disk Drives 2 x 600GB 6Gbps10K SAS Hard Disk Drive.
Graphics	Graphics Controller 16MB
Ethernet Adapter	Server should be configured with 2-port 10 Gb Ethernet Adapter, Computer node should support FCOE and ISCSI functionality on demand
Fiber Channel HBA Connectivity	1xDual Port 16Gbps Fiber Channel
Warranty & Support	3 years comprehensive warranty with 24x7 6Hour Call to Repair Support.
Failure Alerting Mechanism	Failure Alerting Mechanism The server should be able to alert impending failures on maximum number of components. The components covered under alerting mechanism should at least include Processor, memory and HDDs





Compute Nodes - Technical Specs (Qty=1) (Management server) for Above Blade Chassis	
CPU	2x12 Cores intel E5-2600 v4 series minimum 2.2GHz processor or higher
Memory	128 GB RAM (DDR4 LRDIMMs or RDIMMs), scalable up to 1TB (min 16 Slots)
SCSI Controllers	Integrated Hardware Raid Controller to supports Hardware Raid RAID1
Disk Drives	Disk Drives 2 x 600GB 6Gbps10K SAS Hard Disk Drive.
Graphics	Graphics Controller 16MB
Ethernet Adapter	Server should be configured with 2-port 10 Gb Ethernet Adapter, Computer node should support FCOE and iSCSI functionality on demand
Fiber Channel HBA Connectivity	1xDual Port 16Gbps Fiber Channel
Warranty & Support	3 years comprehensive warranty with 24x7 6Hour Call to Repair Support.
Failure Alerting Mechanism	Failure Alerting Mechanism The server should be able to alert impending failures on maximum number of components. The components covered under alerting mechanism should at least include Processor, memory and HDDs

Compute Nodes - Technical Specs (Qty=1) (Application server 2) for Above Blade Chassis	
CPU	2x12 Cores intel E5-2600 series minimum 2.2GHz processor or higher
Memory	128 GB RAM (DDR4 LRDIMMs or RDIMMs), scalable up to 1TB (min 16 Slots)
SCSI Controllers	Integrated Hardware Raid Controller to supports Hardware Raid RAID1
Disk Drives	Disk Drives 2 x 600GB 6Gbps10K SAS Hard Disk Drive.
Graphics	Graphics Controller 16MB
Ethernet Adapter	Server should be configured with 2-port 10 Gb Ethernet Adapter, Computer node should support FCOE and iSCSI functionality on demand
Fiber Channel HBA Connectivity	1xDual Port 16Gbps Fiber Channel





Warranty & Support	3 years comprehensive warranty with 24x7 6Hour Call to Repair Support.
Failure Alerting Mechanism	Failure Alerting Mechanism The server should be able to alert impending failures on maximum number of components. The components covered under alerting mechanism should at least include Processor, memory and HDDs

Compute Nodes - Technical Specs (Qty=1) (Application server 3) for Above Blade Chassis

CPU	2x12 Cores Intel E5-2600 series minimum 2.2GHz processor or higher
Memory	128 GB RAM (DDR4 LRDIMMs or RDIMMs), scalable up to 1TB (min 16 Slots)
SCSI Controllers	Integrated Hardware Raid Controller to supports Hardware Raid RAID1
Disk Drives	Disk Drives 2 x 600GB 6Gbps10K SAS Hard Disk Drive.
Graphics	Graphics Controller 16MB
Ethernet Adapter	Server should be configured with 2-port 10 Gb Ethernet Adapter, Computer node should support FCOE and iSCSI functionality on demand
Fiber Channel HBA Connectivity	1xDual Port 16Gbps Fiber Channel
Warranty & Support	3 years comprehensive warranty with 24x7 6Hour Call to Repair Support.
Failure Alerting Mechanism	Failure Alerting Mechanism The server should be able to alert impending failures on maximum number of components. The components covered under alerting mechanism should at least include Processor, memory and HDDs

Storage System (Qty=1) (Primary)

Storage Type	Storage Array (Unified)
Controller	Dual Active/Active controllers with minimum 6 Cores (per controller) Intel Xeon E5 series processor or equivalent or higher
Protocols	FC, iSCSI, NAS Servers Multi-protocol for UNIX and SMB clients (CIFS/NFS, etc.), SNMPv3,SMTP, Link aggregation for file provisioning



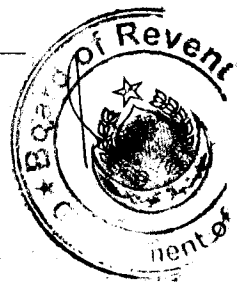


Cache	Minimum 64 GB Cache for proposed storage system (Higher side can be quoted) write cache must persistence during controller failure to prevent performance degradation Cache can be enhanced and scalable up to 128GB as and when required or by adding controllers in pair.
Usable Capacity	40TB useable.Min 2.5TB (RAID-5) on SSD using 200/400/800 GB 2.5" SFF, Min 17 TB (RAID-5) SAS using 10K 2.5" SAS HDD/ (not more than 1.2TB capacity drive). Min 20TB (RAID-6) NI-SAS using 7.2K 2.5" SAS HDD. Only physical capacity will be considered.
Scalability	The storage array must support at least 150 disk drives behind the proposed pair of controllers. It must be a single or tightly clustered singly managed system rather than aggregate of multiple separate smaller boxes. The same should be upgradeable to minimum 550 drives by adding controllers / changing the controllers
Hot-Spare Disks	Must include minimum one hot spare disk for each type of disk drive. Array must have the optimal quantity of global hot spare disks as recommended by the manufacturer (in addition to the usable capacity)
Host Connectivity Ports & Protocols	Proposed storage system must have minimum 2 x 16Gbps FC ports Per controller, 2 x 10 GbpsSCSI SFP+ ports per controller.
Disk Drive Support	Offered Storage shall support 300GB/600GB 15KRPM SAS Drives, 600GB/900GB/1.2TB/1.8TB 10KRPM SAS Drives and 400GB/800GB Flash Drives
Raid Level Support	Supported pools and traditional RAID level should be 1, 10, 5, 6
Architecture	Offered storage system should not have any single point of failure at controller, management console, power supplies, data paths etc.
Capacity Optimization	Proposed storage should support built-in capacity optimization feature like De-duplication/Compression.
Thin Provisioning	Offered storage array should be supplied with Thin provisioning Capability
Storage Replication	Offered storage solution should support IP replication with compression/WAN optimization capability for Block and file. Continuous protection solution which can protect diverse Helps mitigate operational and physical disaster Should have sync and asyncreplication





	Storage Replication must have support & configurable for Virtual machines for disaster recovery.
Snaps & Clones	The Storage System must have the Capability to support creation of instantaneous or Point-In-Time Snapshot copies of volumes. The snapshot feature should support incremental and thin provisioned volumes. Software or license for application aware snap shot for Hyper-V, vmwareetc should be included with proposed solution for full capacity from day one.
Performance Monitoring	Proposed solution must include performance management software for detailed reporting.
Data Tiering	Storage Solution must include tiering functionality. Tiering functionality must be able to dynamically prioritize workload. System must be able to dynamically optimize data placement across three different tiers of data storage. Tiering functionality must allow for customizable monitoring cycles, offered storage should support quality of service feature to optimize the IOPs utilization for different machines like production, test and development machines
Mounting Kit	Rack Mounting Kit
Management Software	Easy to use GUI based and web enabled administration interface for configuration, managing, administration and associated functionalities including deployment, automation, provisioning, and protection and monitoring management. Solution Should offer real time performance monitoring tools giving information on volume throughput, I/O rate and latency etc
Data Migration	The Storage System should have the capability to support Non-Disruptive Data migration across Volumes.
Operating System Support	Proposed storage must support leading operating systems and Hypervisors including VMWare, Hyper-V, Red Hat Linux, Suse Linux, Solaris, AIX and HP-UX, Microsoft Windows.
Warranty & Support	Proposed storage system should be quoted with minimum 3 years (24x7) Hardware and Software warranty and support back to back onsite OEM support.
Others	Proactive system health monitoring, must all capacity upgrade without any additional software license. Spare parts depot must have in Karachi. Offered Storage array shall be end to end 12 Gbps enabled(Meaning both front end FC ports and Back-end Engines shall be operated at minimum 12 Gbps) Implementation needs to be done by vendor and must have office & certified human (resourceat least 2)





	available in Karachi. Vendor must submit certified resources certificate at the time of document submission
--	--

Tape Library (Qty-1)

One Tape Library min LTO6 2 x FC drives with 20- tape data cartridges & labeled 2 x Cleaning Cartridges, 4 x Fiber cables (5m), 48 data cartridge slots
Should have Dual Power supply, Rack Mounted Kits
Full compatibility with proposed backup solution.
Technology life-time of at least 5 years from date of acquisition by SRB, meaning manufacturer upgrades and expansions must be available for the next 5 years
Technology and manufacturer support for a minimum of 5 years from date of acquisition by SRB, meaning that support for proposed equipment must be available and provided during this period of time.

PHYSICAL & VIRTUAL MACHINE MAPPING

4Node Virtual Cluster	Hyper-v01	Hyper-v02	Hyper-v03	Hyper-v04	Hyper-v05
	Socket=2 24 Core, 192G Ram	24Core, 128G Ram	Socket=2 24 Core, 128G Ram	Socket=2 24 Core, 128GRam	Socket=2 24 Core, 128GRa m
Guest VM /Cluster	Web Server/App Server01, Reverse Proxy, etc	Antivirus Server, Wsus, App Server02, etc	Reporting Server, Monitoring Server, AD, VM Manageme nt, etc	AD, APP Load balancer etc	APP Load balancer, App server2 etc
HA VM	CD*	CD*	CD*	CD*	CD*
Host Cluster					

Physical Server (Non-Virtualized) Primary Site	Server-05(DB01)	Server-06(DB-02)	Server-07 (Backup)
	Socket=2 18 Core, 128G Ram	18 Core, 128G Ram	Socket=1 8 Core, 64G Ram
Physical	Microsoft SQL SERVER DB-01	Microsoft SQL SERVER DB-02	Backup Software need to configure with Tape Library

DR Site Server	HyperV-01 DR-01	HyperV-02 DR-02	DR-DB Server (Non-Virtualized)
----------------	-----------------	-----------------	--------------------------------





	Socket=2 24 Core, 128G Ram	Socket=2 24 Core, 128G Ram	Socket=1 12 Core, 128G Ram
Guest VM /Cluster	Web Server/App Server01, Reverse Proxy, etc.	Antivirus Server, WSUS, App Server02, etc	Microsoft SQL Server DB DR
HA VM	CD*	CD*	Not Applicable
Host Cluster			

Storage System (Qty=1) (DR)	
Storage Type	Storage Array (Unified)
Controller	Dual Active/Active controllers with minimum 6 Cores (per controller) Intel Xeon E5 series processor or equivalent or higher
Protocols	FC, iSCSI, NAS Servers Multi-protocol for UNIX and SMB clients (CIFS/NFS, etc.), SNMPv3, SMTP, Link aggregation for file provisioning
Cache	Minimum 64 GB Cache for proposed storage system (Higher side can be quoted) write cache must persistence during controller failure to prevent performance degradation Cache can be enhanced and scalable up to 128GB as and when required or by adding controllers in pair.
Usable Capacity	40TB useable. Min 2.5TB (RAID-5) on SSD using 200/400/800 GB 2.5" SFF, Min 17 TB (RAID-5) SAS using 10K 2.5" SAS HDD/ (not more than 1.2TB capacity drive). Min 20TB (RAID-6) NI-SAS using 7.2K 2.5" SAS HDD. Only physical capacity will be considered.
Scalability	The storage array must support at least 150 disk drives behind the proposed pair of controllers. It must be a single or tightly clustered singly managed system rather than aggregate of multiple separate smaller boxes. The same should be upgradeable to minimum 550 drives by adding controllers / changing the controllers
Hot-Spare Disks	Must include minimum one hot spare disk for each type of disk drive. Array must have the optimal quantity of global hot spare disks as recommended by the manufacturer (in addition to the usable capacity)
Host Connectivity Ports & Protocols	Proposed storage system must have minimum 2 x 16Gbps FC ports Per controller, 2 x 10 Gbps iSCSI SFP+ ports per controller.





Disk Drive Support	Offered Storage shall support 300GB/600GB 15KRPM SAS Drives, 600GB/900GB/1.2TB/1.8TB 10KRPM SAS Drives and 400GB/800GB Flash Drives
Raid Level Support	Supported pools and traditional RAID level should be 1, 10, 5, 6
Architecture	Offered storage system should not have any single point of failure at controller, management console, power supplies, data paths etc.
Capacity Optimization	Proposed storage should support built-in capacity optimization feature like De-duplication/Compression.
Thin Provisioning	Offered storage array should be supplied with Thin provisioning Capability
Storage Replication	Offered storage solution should support IP replication with compression/WAN optimization capability for Block and file. Continuous protection solution which can protect diverse Helps mitigate operational and physical disaster Should have sync and async replication Storage Replication must have support & configurable for Virtual machines for disaster recovery.
Snaps & Clones	The Storage System must have the Capability to support creation of instantaneous or Point-In-Time Snapshot copies of volumes. The snapshot feature should support incremental and thin provisioned volumes. Software or license for application aware snap shot for Hyper-V, vmwareetc should be included with proposed solution for full capacity from day one.
Performance Monitoring	Proposed solution must include performance management software for detailed reporting.
Data Tiering	Storage Solution must include tiering functionality. Tiering functionality must be able to dynamically prioritize workload. System must be able to dynamically optimize data placement across three different tiers of data storage. Tiering functionality must allow for customizable monitoring cycles, offered storage should support quality of service feature to optimize the IOPs utilization for different machines like production, test and development machines
Mounting Kit	Rack Mounting Kit
Management Software	Easy to use GUI based and web enabled administration interface for configuration, managing, administration and associated functionalities including deployment, automation, provisioning, and protection and monitoring management. Solution Should offer real time performance





	monitoring tools giving information on volume throughput, I/O rate and latency etc
Data Migration	The Storage System should have the capability to support Non-Disruptive Data migration across Volumes.
Operating System Support	Proposed storage must support leading operating systems and Hypervisors including VMWare, Hyper-V, Red Hat Linux, Suse Linux, Solaris, AIX and HP-UX, Microsoft Windows.
Warranty & Support	Proposed storage system should be quoted with minimum 3 years (24x7) Hardware and Software warranty and support back to back onsite OEM support.
Others	Proactive system health monitoring, must all capacity upgrade without any additional software license. Spare parts depot must have in Karachi. Offered Storage array shall be end to end 12 Gbps enabled(Meaning both front end FC ports and Back-end Engines shall be operated at minimum 12 Gbps) Implementation needs to be done by vendor and must have office & certified human (resource at least 2) available in Karachi. Vendor must submit certified resources certificate at the time of document submission

FC Switches (Qty=2)	
Base Switch	Must be 24 ports of FC 16Gbps Switch. Full fabric License must be available
Active Ports	Minimum 12 ports (with SFP's) per switch
FC Cables	12 x 10 meter LC/LC Cables (OM4)
Warranty & Support	Proposed switches should be quoted with minimum 3 years Hardware and Software warranty and support.

4.2.3 Software & Licenses

Operating System	
OS	OS and hypervisor Licenses Windows Server 2016 data center edition (with Hypervisor) = 192 Cores (24 cores on each server), and 1x Hypervisor Management Windows Server Client Access License = (500 users) Any other license requirement to replicate virtual machines to the DR site must be included in the solution and bidders





	<p>responsibility</p> <p>Support & maintenance for three (3) years</p> <p>Implementation needs to be done by vendor and must have office & certified human resources(at least 2) available in Karachi</p> <p>High availability, fault tolerance and Disaster Recovery of virtual machines needs to be verify and test in the acceptance</p> <p>Note:OS support and maintenance must be started after solution roll out</p>
Database Licenses	
Database Server (OS License)	<p>Windows Server 2016 data center edition = 03 server</p> <p>Primary site 2 server= Total32Cores , DR site 1 server = Total 16 Cores</p>
Database License (For licensing above DB servers configuration must be consulted)	<p>Microsoft SQL Server Enterprise License for two node cluster</p> <p>DB cluster Node-1 =16Core</p> <p>DB Cluster Node-2= 16Core</p> <p>DB Third Node-3 (DR)= 16 Core</p> <p>Three Years 24x7 Support and maintenance</p> <p>Note:Database & OS support and maintenance must be started after solution roll out</p>
Backup & Recovery Software (QTY=1)	
<p>10TB front capacity based license is required</p> <p>capacity based licensing should include entitlement of all software features and unlimited number of backup clients</p> <p>Should support application consistent backups of Oracle, MSSQL, MY SQL.</p> <p><u>Should Support virtual machine backups granular level running over (ESX, Hyper-V)</u></p> <p>Backup, restore, HSM and archive functions to and from fiber channel connected tape and storage devices disk subsystems</p> <p>To reduce network bandwidth impact when copying data over Local Area Network (LAN) and the Wide Area Network (WAN).</p> <p>Data protection of the catalogue, index and database of the backup server, in order to ensure the recovery of the backup environment to its fully functioning state.</p> <p>Automatic and manual scheduling of backup jobs on the backup server.</p> <p>Must have a defined mechanism to recover backup server/ nodes from failure</p> <p>Must support backup, recover, restore following systems (MS-SQL server, Oracle, DB-2. MYSQL)</p> <p>Must support backup, recover, restore following Operating systems (Linux, Unix, AIX,Windows)</p> <p>Must support backup, recover, restore of virtual machines</p> <p>Support the copy of backup data directly from backup media to backup media over LAN and WAN including:Tape to disk, Disk to Disk, Disk to Tape</p> <p>Three years on-site 24x7 with direct support from Manufacturer locally</p> <p>Manufacturer should have minimum 5 references sites of backup & recovery solution projects in Pakistan.</p> <p>Manufacturer should be in the manufacturing of backup & recovery products for last 10 years.</p>	





Implementation needs to be done by vendor and must have office & certified human resources (at least 2) available in Karachi.

Vendor must submit certified resources certificate at the time of document submission

Antivirus Software

The solution must support and not limited to:

4.2.3.1.1.1.1.1 End Point protection Solution

- **Scanning and Detection capability/ Identification methods.**

- a. Signature-based detection
- b. Heuristics
- c. Root kit detection
- d. Real-time protection
- e. Intelligent Threat Cloud Service for client installation packages

- **Virus and Spyware Protection**

- a) SONAR
- b) Auto-Protect
- c) Download Protection
- d) Early Launch Anti-Malware Driver.

With

- a) Enable Suspicious Behavior Detection
- b) Scan files on remote computers

- Virus, Trojans, malware, ad-ware, spy-ware and spam traffic should be blocked.

- Built in Firewall support

- Intrusion Prevention

- Application and device Control (USB and removable Media Blocking)

- Host integrity

- Live update

- Exceptions

Extra features:-

- Virus scan logic moved to Auto-Protect user mode
- Emulator for packed malware
- Advanced Machine Learning (AML) on the endpoint for improved static detections
- Insight Lookup
- Reports display an application's hash value you can use to block applications
- Client submissions and server data collection
- LiveUpdate downloads new types of content
- The scan engine, utilized by the server protection software, must be certified by the International Computer Security Association (ICSA). The scan engine must be capable of multi-thread scanning.
- Application Blocking (System Lockdown). Should have option to integrate with Active Directory.
- Protection against malicious threats that target Windows





Mobile Operating Systems and Andriod, IOS and Symbian.

- **Support**

- It should support Microsoft Windows 10/8/7/ servers 2016/2012/2008/and Linux platforms- MAC OS.
- Minimum agents for Antivirus/Anti-spyware, Firewall, IPS, device & Application blocking.

- **Updation**

- Scanning and Updation of Anti-X should be done automatically at Central Site and site office levels connected through different Modes.

- **Administration and Management**

- The administrator must be able to monitor the status all network servers in real-time to determine connection status, infection status, pattern file and program solution versions.
- The solution should support web based customized graphical reporting.
- Remote installation functionality for Clients/Servers. Password protected Clients/Servers Un-installation.
- Centralized Patch Management of all the client machines should be possible.
- The server protection software must provide automated maintenance tasks to include: pattern and program solution file updating, compiling virus logs, and setting parameters for real-time scanning.

Support from Vendor (back to back by OEM) is very vital and following is required after the deployment of solution:

1. Regular Updates
2. Virus removal Tools
3. Zero Day Threats Mitigation
4. New Virus Outbreak Removal Tools
5. Traffic Analyzer Tools
6. Essential Support from the Principal
7. Centralized management of anti-x solution servers
8. Complete organizational threat Report generation from a single console
9. Capability to forward logs to syslog server
10. Replacement of Already Installed Symantec gateway servers
11. Enterprise support 24x7

Licenses required for the following Services= 500 Clients

SSL Certificate

Extended Validation SSL certificate required from Trusted certification authority

Note: Budget needs to be allocate by the vendor and at the time of implementation client will acquire the certificate form CA by providing information it required



**Application Load Balancer (Software edition) = 02**

2Gbps throughput and 1000 SSL transactions per second
High availability Support
Layer 4 & 7 load balancing
5-6 Real Server may be used and in the future can be increased
3yr 24x7 support and maintenance required
Support and maintenance must be renewable on demand for next years

Mobile Kits (Qty=15)

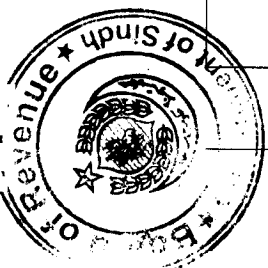
Laptop Computer	<ul style="list-style-type: none">• 7th Gen Intel core i3 7100 processor or higher• 4 GB DDR4 RAM support upto 32 GB RAM• 1 TB 5400 RPM Hard drive support 512 SSD or Higher• Intel WLAN with BT support• Integrated Camera 720P Camera• 14inch HD display or higher• 65 Watt Smart Adapter• Spill Resistant Keyboard• All standard accessories including Original bag & optical mouse• Original License Microsoft Windows 10.1 Professional
Fingerprint Reader	<ul style="list-style-type: none">• Compliant with standards: FBI IAFIS-IQS Appendix F, ANSI-NIST• Resolution: 500 dpi (horizontal and vertical)• Dimension (L*W*H): 14x12.5x15.1cm (5.5x4.9x5.9")• Slap print size 7,8 x 8,8cm (3.1 x 3.5")• Rolled print size 3,8 x 4cm (1.5x1.6")• EMC/Safety standards: CE, FCC• RoHS compliant <p>The terminal has a MTBF in excess of 50,000 hours.</p>
Digital Camera	<p>The digital camera being proposed should be compliant with the ICAO compliant photograph capture software being proposed in the software section of the proposal. The minimum specifications for the digital camera are</p> <ul style="list-style-type: none">• 12 Megapixel• DSLR• USB connectivity <p>With all standard accessories including lens</p>
Camera Stand	<ul style="list-style-type: none">• Load Capacity: 22 lb• Max Height: 62"• Min Height: 8"• Leg Sections: 4• Max Weight: 4 lb• Traveler Lock





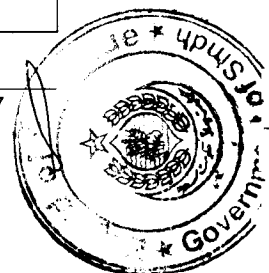
	<ul style="list-style-type: none"> Shoulder Strap
Carrying Case	The case should be able to accommodate all the items in the kit including power adaptors.

SSL VPN CONCENTRATOR Solution (Qty=1)	
SSL VPN Concentrator	Must have all SSL VPN secure remote access features (Bidder shall provide complete solution hardware + Software + Licenses)
Secure Access	Secure access to business applications for remote and mobile workers and dynamic, flexible and elastic provisioning of secure access services.
Number of Users	Must support and fully licensed with 20 Concurrent SSL users and must support database of 50 remote SSL users or above. These licenses must be life time and do not require annual renewal and must be on name of client.
Scalability	Must support pay as your grow scalability for future requirements
Connectivity	Remote users may connect with VPN Concentrator by using VSAT, DSL, Fiber, WLL, GPRS/EDGE, 3G etc as connectivity mode so solution must be able to provide required features on any type of connectivity mode.
Username Password Authentication (User Identification)	Remote users must enter username and password which shall be authenticated at Central Software VPN Concentrator
System identification	Solution must provide a software which shall be installed at remote User PC/Laptop/Mobile/Tablet etc. This software will make a unique hardware ID of that system. This hardware ID shall be authenticated at Central Software VPN Concentrator before allowing system on the network. User having valid username and password must only be allowed to enter in the network from authorized system. User must not be able to enter in the network from unauthorized system. Each user must be bind with hardware of the remote user PC/Laptop/Mobile/Tablet.
Client Software	Solution must provide client software for remote users. Also support Clientless web access.
Certificate Authentication	System must be able to authenticate based on certificates
Access	Controlled access for managed and un-managed devices and a range of operating systems and browsers
Overall Throughput	Centralized VPN Concentrator must support 20Mbps Overall Throughput with all features enabled.
Encryption	SSL encryption for data in transit
Interfaces	Must support 2 or more Ethernet physical interfaces (One or more interface shall be used for private side and other for public)





Endpoint Security	Endpoint security including device-based identification, host-checking, cache cleaning and adaptive policies
Per user Policy	Per-user policy and a range of AAA authentication schemes for identity based access to URLs, files, networks and applications
Operating Systems	Cross-platform support for a range of operating systems (Windows, Linux, Android etc) and browsers (Internet Explorer, Firefox, Chrome etc)
Administration	CLI, WebUI and centralized management for ease of use and configuration
Monitoring, Logging and Centralized Management	Solution must support monitoring of all users and involved network elements, support loggings of all events, historical reporting and centralized management.
Tunneling	Split tunneling Full tunneling control Internal static and dynamic IP address assignment External DHCP server IP address assignment Detailed traffic logs
Supported platform of Client	Must support all available operating systems including but not limited to Windows all available versions with 32/64bit, Linux all flavors with 32/64bit, Android etc
Filtering	Layer-7 content filtering Permit or deny policies DDoS prevention
Encryption	TLS 1.0/SSL 3.0, TLS 1.1/1.2 – AES128-SHA, AES256-SHA, DES/3DES, SHA/ MD5 – 1024 and 2048-bit keys etc
Authentication	LDAP, RADIUS, AD, LocalDB, LocalDB password policy control Backup/restore LocalDB – Export LocalDB Certificate-based authentication, Single sign-on etc
Authorization	Granular access control Role-based access control Roles defined by username, group name, source IP etc Permit and deny policies Authorize user based on hardware ID Detailed logging
Auditing	Logs all user activity (success, failure, attack) Syslog Alarm/trap Stats/counters SNMP MIB
System Administration	WebUI Role-based administration Strong administrator authentication Configuration synchronization Full device backup and restore NTP, NAT, logging





Data Over the network	Remote user can send/receive any type of data including data, voice and video so proposed solution must support all data types. User sitting at HQ (Central Site) must also be able to access services/system of remote user as well.
Logging	Logs all user activity (success, failure, attack) – Syslog – Alarm/trap – Stats/counters – SNMP MIB
OS	Remote user can launch SSL VPN via PC, Laptop, Mobile /TAB Device etc. Solution should provide and compatible with different flavors of OS (Windows, Android, iOS, Linux etc)
Terms and Conditions	<ol style="list-style-type: none"> 1. Proposed Solution must fully comply all features mentioned above. 2. All above requirements are mandatory 3. Bidder shall submit complete technical proposal which must have detail of all required features 4. The Bidder must either be an equipment manufacturer or its Premium Partner. A valid certificate from the manufacturer in this regard is required. 5. Support for installation and operations of one year.

4.2.4 Technical Specifications (DR site Hardware Solution)

Rack Mounted Server (Qty-02) (DR)	
CPU	2x12 Cores intel E5-2600 series minimum 2.2GHz processor
Memory	128GB RAM (DDR4 LRDIMMs or RDIMMs), scalable up to 1TB (min 16 Slots)
SCSI Controllers	Integrated Hardware Raid Controller to supports Hardware Raid RAID 0,1
Disk Drives	Disk Drives 2 x 600GB 6Gbps15K SAS Hard Disk Drive.
Graphics	Graphics Controller 16MB
Ethernet Adapter	Server should be configured with 4-port 1Gb Ethernet Adapter, also support FCOE and iSCSI functionality on demand
Fiber Channel HBA Connectivity	2x single Port 16Gbps Fiber Channel
Warranty & Support	3 years comprehensive warranty with 24x7 6Hour Call to Repair Support.
Failure Alerting Mechanism	<p>Failure Alerting Mechanism</p> <p>The server should be able to alert impending failures on maximum number of components. The components covered under alerting mechanism should at least include Processor,</p>



	memory and HDDs
Essential Accessories	Standard Rack Mount Kit with ready rails Cable Management Arm & Ethernet Cables
Other	The proposed solution should have management module from where Servers hardware resources(power on, powered off, remote console etc) can be controlled using browser or using a common GUI

Rack Mounted Server (Qty-01) (DR Database Server)	
CPU	1x16Cores intel E5-2600 series minimum 2.2GHz processor
Memory	128GB RAM (DDR4 LRDIMMs or RDIMMs), scalable up to 1TB (min 16 Slots)
SCSI Controllers	Integrated Hardware Raid Controller to supports Hardware Raid RAID 0,1
Disk Drives	Disk Drives 2 x 600GB 6Gbps 15K SAS Hard Disk Drive.
Graphics	Graphics Controller 16MB
Ethernet Adapter	Server should be configured with 4-port 1Gb Ethernet Adapter, also support FCOE and iSCSI functionality on demand
Fiber Channel HBA Connectivity	1x dual Port 16Gbps Fiber Channel
Warranty & Support	3 years comprehensive warranty with 24x7 6Hour Call to Repair Support.
Failure Alerting Mechanism	Failure Alerting Mechanism The server should be able to alert impending failures on maximum number of components. The components covered under alerting mechanism should at least include Processor, memory and HDDs
Essential Accessories	Standard Rack Mount Kit with ready rails Cable Management Arm & Ethernet Cables
Other	The proposed solution should have management module from where Servers hardware resources(power on, powered off, remote console etc) can be controlled using browser or using a common GUI

4.2.5 Commissioning / Acceptance Criteria

- Complete hardware and relevant Software as specified in the RFP must have been supplied, installed and commissioned by the OEM.



- The acceptance / performance test will be performed after completion of installation and commissioning of all the components of the solution at the sites of installation (Primary & DR). The bidder will be responsible for setting up and running the acceptance test without any extra cost to the BOR Sindh, according to the recommendation and assurance of OEM. The Bidder shall maintain necessary logs for the test to be conducted. The acceptance test will be verified by the BoR Sindh designated official(s).
- Upon completion of the required testing and successful commissioning of the project, both BoR Sindh, and the bidder will sign commissioning / sign off letter.

4.2.6 Scope of Work

4.2.6.1.1 Professional Services

The bidder will be responsible for the following through OEM:-

- Supplying, Implementation, deployment, testing and commissioning of hardware and software
- Integration with the existing system (if Any requirement)
- The bidder will be responsible to manage any change related to software/hardware at server(s) side for the successful integration/migration with new storage solution
- Performance tuning and optimization
- Onsite Configuration & integration of existing Hardware
- Training including all expenses.
- The bidder will provide from OEM registered training Centre with original training kits including certification track for four (04) resources.

4.2.6.1.2 Turnkey solution

It would be the responsibility of the successful bidder/vendor to provide a turnkey solution. No equipment which has four years of end-of-sale (EOS) and end-of life (EOL) for support and expansion purposes shall be offered.

4.3 Site Hardware, Electrical Equipment and Civil Work

4.3.1 Summary

Sr.#	Item	Qty
1	Desktop Computer	338
2	Finger Print Reader	92
3	Digital Camera	96
4	Background Screen	96
5	Camera Tripod	96
6	Token Printer	90
7	Digital Scanner	126
8	Laser Jet Printers	100
9	Bar Code Readers	93





BoQ Civil Works

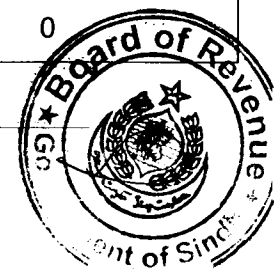
pprox Area sqft	False Ceilings	Floor Tiles	Distribution Board	LED Lighting Solution	Network Point (I/O's Cat 6 Cable Connector with Faceplate)	Painting Work	Window Coverings	Wiring/Cabling	Room Partition (Where Required)
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
800	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
800	1	1	1	1	3	1	1	1	1
800	1	1	1	1	3	1	1	1	1
800	1	1	1	1	3	1	1	1	1
800	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
800	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1

BOQ Computer Related Equipment

Manag ement	Token Printer	-	Total Number of Computers	Scann er	Finger Print Reader	Camer as	Back groun d Scree n	Camer a Stand (Tripod)	Laser Printe r	Barcode Reader	Switch 24 port path panel +9U Rack	Generato r 5 KVA	Generator 3 KVA	UPS 3 KVA with extended batteries
0	1		3	1	1	1	1	1	1	1	1	0	1	1
0	1		3	1	1	1	1	1	1	1	1	0	1	1
58	90		338	126	92	96	96	96	100	93	99	5	94	99

BoQ Civil Works

pprox Area sqft	False Ceilings	Floor Tiles	Distribution Board	LED Lighting Solution	Network Point (I/O's Cat 6 Cable Connector with Faceplate)	Painting Work	Window Coverings	Wiring/Cabling	Room Partition (Where Required)
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0





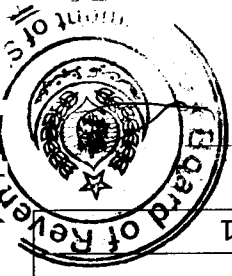
BoQ Civil Works									
pprox Area sqft	False Ceilings	Floor Tiles	Distribution Board	LED Lighting Solution	Network Point (I/O's Cat 6 Cable Connector with Faceplate)	Painting Work	Window Coverings	Wiring/Cabling	Room Partition (Where Required)
800	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
2000	1	1	1	1	10	1	1	1	1
1000	1	1	1	1	4	1	1	1	1
1000	1	1	1	1	4	1	1	1	1
800	1	1	1	1	4	1	1	1	1

BoQ Civil Works

pprox Area sqft	False Ceilings	Floor Tiles	Distribution Board	LED Lighting Solution	Network Point (I/O's Cat 6 Cable Connector with Faceplate)	Painting Work	Window Coverings	Wiring/Cabling	Room Partition (Where Required)
1000	1	1	1	1	4	1	1	1	1
1000	1	1	1	1	4	1	1	1	1
2000	1	1	1	1	15	1	1	1	1
1000	1	1	1	1	4	1	1	1	1
1000	1	1	1	1	4	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
800	1	1	1	1	4	1	1	1	1
800	1	1	1	1	4	1	1	1	1
1000	1	1	1	1	4	1	1	1	1
2000	1	1	1	1	10	1	1	1	1
1000	1	1	1	1	4	1	1	1	1
1000	1	1	1	1	4	1	1	1	1

BOQ Civil Works

pprox Area sqft	False Ceilings	Floor Tiles	Distribution Board	LED Lighting Solution	Network Point (I/O's Cat 6 Cable Connector with Faceplate)	Painting Work	Window Coverings	Wiring/Cabling	Room Partition (Where Required)
600	1	1	1	1	3	1	1	1	1
1000	1	1	1	1	4	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
1000	1	1	1	1	4	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
800	1	1	1	1	4	1	1	1	1
1000	1	1	1	1	4	1	1	1	1
600	1	1	1	1	3	1	1	1	1
800	1	1	1	1	4	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
1000	1	1	1	1	4	1	1	1	1
600	1	1	1	1	3	1	1	1	1





BoQ Civil Works

pprox Area sqft	False Ceilings	Floor Tiles	Distribution Board	LED Lighting Solution	Network Point (I/O's Cat 6 Cable Connector with Faceplate)	Painting Work	Window Coverings	Wiring/Cabling	Room Partition (Where Required)
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
800	1	1	1	1	4	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1

BoQ Civil Works

pprox Area sqft	False Ceilings	Floor Tiles	Distribution Board	LED Lighting Solution	Network Point (I/O's Cat 6 Cable Connector with Faceplate)	Painting Work	Window Coverings	Wiring/Cabling	Room Partition (Where Required)
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
800	1	1	1	1	0	1	1	1	1
600	1	1	1	1	3	1	1	1	1
800	1	1	1	1	4	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1
600	1	1	1	1	3	1	1	1	1

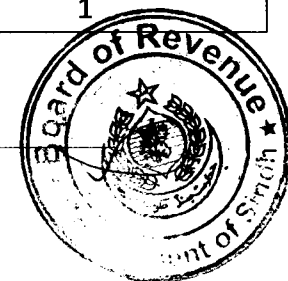




BOQ Electrical Appliances

Paper redder	Fire Extinguisher Bottle	Fire Proof Almirah	Office Chairs	Visitor Chairs	Tables	Electrical Switches (4 in 1 Complete)	CCTV Camera	CCTV DVR	CCTV HDD	CCTV Monitor	Ceiling Fans	Air Conditioning (1.5Tons Split)
2	0	0	0	0	0	0	0	0	0	0	0	0
1	2	6	0	0	0	0	0	0	0	0	0	0
1	2	1	0	0	0	1	0	0	0	0	0	0
1	2	1	0	0	0	1	0	0	0	0	0	0
1	2	1	0	0	0	0	0	0	0	0	0	0
1	2	1	0	0	0	0	0	0	0	0	0	0
1	2	1	0	20	0	1	0	0	0	0	0	0
1	2	1	0	10	0	1	0	0	0	0	0	0
1	2	1	0	10	0	1	0	0	0	0	0	0
1	2	1	0	5	0	1	0	0	0	0	0	0
1	2	1	0	5	0	1	0	0	0	0	0	0
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	10	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	10	3	4	4	1	1	1	2	1
1	1	1	3	10	3	4	4	1	1	1	2	1

BOQ Electrical Appliances												
Paper redder	Fire Extinguisher Bottle	Fire Proof Almirah	Office Chairs	Visitor Chairs	Tables	Electrical Switches (4 in 1)	CCTV Camera	CCTV DVR	CCTV HDD	CCTV Monitor	Ceiling Fans	Air Conditioning (1.5Tons Split)
1	1	1	3	10	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	10	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	10	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	2	4	10	4	6	6	1	1	1	2	1





BOQ Electrical Appliances

Paper redder	Fire Extinguisher Bottle	Fire Proof Almirah	Office Chairs	Visitor Chairs	Tables	Electrical Switches (4 in 1)	CCTV Camera	CCTV DVR	CCTV HDD	CCTV Monitor	Ceiling Fans	Air Conditioning (1.5Tons Split)
2	2	4	10	25	10	12	12	1	2	2	8	4
1	1	2	4	10	4	6	6	1	1	1	2	1
1	1	2	4	10	4	6	6	1	1	1	2	1
1	1	2	4	5	4	6	6	1	1	1	2	1
1	1	2	4	10	4	6	6	1	1	1	2	1
1	1	2	4	10	4	6	6	1	1	1	2	1
2	2	4	15	30	15	17	18	1	3	3	8	5
1	1	2	4	10	4	6	6	1	1	1	2	1
1	1	2	4	10	4	6	6	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	2	4	10	4	6	6	1	1	1	2	1
1	1	2	4	10	4	6	6	1	1	1	2	1

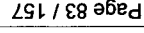
BOQ Electrical Appliances												
Paper redder	Fire Extinguisher Bottle	Fire Proof Almirah	Office Chairs	Visitor Chairs	Tables	Electrical Switches (4 in 1	CCTV Camera	CCTV DVR	CCTV HDD	CCTV Monitor	Ceiling Fans	Air Conditioning (1.5Tons Split)
1	1	2	4	10	4	6	6	1	1	1	2	1
2	2	4	10	25	10	12	12	1	2	2	8	4
1	1	2	4	10	4	6	6	1	1	1	2	1
1	1	2	4	10	4	6	6	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	2	4	10	4	6	6	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	2	4	10	4	6	6	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	2	4	10	4	6	6	1	1	1	2	1
1	1	2	4	10	4	6	6	1	1	1	2	1





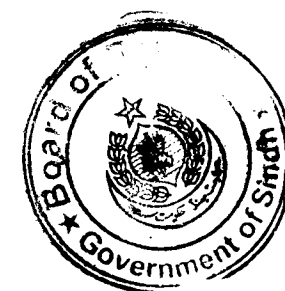
BOQ Electrical Appliances

Paper redder	Fire Extinguisher Bottle	Fire Proof Almirah	Office Chairs	Visitor Chairs	Tables	Electrical Switches (4 in 1)	CCTV Camera	CCTV DVR	CCTV HDD	CCTV Monitor	Ceiling Fans	Air Conditioning (1.5 Tons Split)
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	2	4	10	4	6	6	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	2	4	10	4	6	6	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1



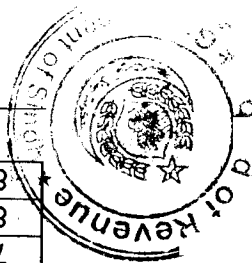
BOQ Electrical Appliances

Paper redder	Fire Extinguisher Bottle	Fire Proof Almirah	Office Chairs	Visitor Chairs	Tables	Electrical Switches (4 in 1)	CCTV Camera	CCTV DVR	CCTV HDD	CCTV Monitor	Ceiling Fans	Air Conditioning (1.5Tons Split)
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
1	1	1	3	5	3	4	4	1	1	1	2	1
104	112	134	311	700	312	433	427	89	93	93	195	99



SRO Sites (89) Readiness Assessment Summary				
S.No	SRO Office	Readiness Factor	Urgency	Degree of Work Required
1	Badin I	1	1	80%
2	Badin II	1	1	80%
3	Mati	1	1	80%
4	Dadu	1	1	80%
5	Johi	1	1	80%
6	K N SHAH	1	1	80%
7	Mehar	1	1	80%
8	Ghotki	1	1	80%
9	Mirpurmathalo	1	1	80%
10	Ubeaoro	1	1	80%
11	Hyderabad	2	4	50%
12	Hyderabad City I	2	1	50%
13	Hyderabad City II	2	1	50%
14	Latif Abad	1	1	80%
15	Qasim Abad	1	1	80%
16	Jacobabad	1	1	80%
17	Thul	1	1	80%
18	Jamshoro	1	1	80%
19	Kotri	1	1	80%
20	Sehwan	1	1	80%
21	Block-F City Court	2	1	50%
22	Clifton I Adjacent DHA phase I Defence	4	5	50%
23	Clifton II Maznine floor	4	4	60%
24	Gadap I DC Office	1	1	80%
25	Gadap II	1	1	80%
26	Gulberg town	3	1	70%
27	Gulshan e Iqbal 111	3	5	70%
28	Gulshan Iqbal II	3	1	70%
29	Korangi	3	5	70%
30	Landhi town	3	1	60%
31	Liaguatabad Town	3	4	60%
32	Lyari Town	3	1	80%
33	New Karachi	3	1	60%
34	North Nazimabad town	2	1	60%
35	Sadar II	2	5	60%
36	Saddar I	2	1	60%
37	Shah Faisal Town	2	1	60%
38	Gulshan e Iqbal I	2	1	60%
39	JamshadTown 1	2	1	60%
40	JamshedTown	2	1	60%





SRO Sites (89) Readiness Assessment Summary				
S.No	SRO Office	Readiness Factor	Urgency	Degree of Work Required
41	Baldia	2	1	60%
42	Kemari	1	1	60%
43	Orangi town	3	1	60%
44	Site Town	3	5	60%
45	Kandhkot	2	1	80%
46	Kashmore	1	1	80%
47	Gambat	1	1	80%
48	KhairpurHeadQuarter	1	1	80%
49	Kotdiji	1	1	80%
50	Tharimwah	1	1	80%
51	Bakrani	1	1	80%
52	Head Quarter Larkana	1	1	60%
53	Nasirabad	1	1	80%
54	Warah	1	1	80%
55	Bin Qasim town	2	1	60%
56	Malir	2	1	60%
57	Digri	1	1	80%
58	KotGhulam Muhammad	1	1	80%
59	MirpurKhas	1	1	80%
60	Mithi	1	1	80%
61	Hala	1	1	80%
62	Mitari	1	1	80%
63	Moro	1	1	80%
64	Kandiaro	1	1	80%
65	Mehrabpur	1	1	80%
66	Nosharoferoz	1	1	80%
67	Daur	1	1	80%
68	NawabsnahMukhtiarKa r office	2	1	80%
69	Sakrand	1	1	80%
70	Qambar	1	1	80%
71	Khipro	2	1	80%
72	Sanghar	2	1	80%
73	Sinjhoro	2	1	80%
74	Tandoadam	1	1	80%
75	Shahdadkot	1	1	80%
76	garhiyasin	1	1	80%
77	Lakhi	1	1	80%
78	Shikarpur head quarter	2	1	80%
79	Panoakil	1	1	80%
80	Rohri	1	1	80%
81	Sukkur headquarter	3	4	60%



SRO Sites (89) Readiness Assessment Summary				
S.No	SRO Office	Readiness Factor	Urgency	Degree of Work Required
82	Tando ALLAHYAR	1	1	80%
83	Tando Muhammad Khan	1	1	80%
84	Jati	1	1	80%
85	Mirpur Sakro	2	1	80%
86	Sijawal	1	1	80%
87	Thatta	2	1	70%
88	Samaro	1	1	80%
89	Umar Kot	1	1	80%

Key

Readiness Factor: Scale Defined 1-5 (1 Minimum to 5 Highest)

Urgency: Priority Assessment (1 Minimum to 5 Highest)

Degree of Work Required: Denoted in percentage points





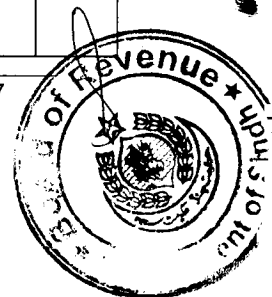
4.3.2.1 Technical Specification (Hardware and Civil Work)

Sr.#	Item	Min. Requirement	
1.	Desktop Computer	<ul style="list-style-type: none"> • Processor: Intel Core i3 (7th Generation) • Chipset: Intel H270 Chipset or Higher Chipset • Memory: 4GB DDR 4 2400 Mhz • HDD: 1TB SATA • Display: 22" (or higher) with VGA and HDMI support • Connectors: Ethernet and wireless (802.11 b/g/n) • VGA, Serial, display port, PCIe & PCI Slot • 1 x M.2 WLAN • Digital Cable Lock for Security • Original License Microsoft Windows 10.1 Professional • All standard accessories (including keyboard, mouse and cables) 	
2.	Finger Print Reader	<ul style="list-style-type: none"> • Compliant with standards: FBI IAFIS-IQS Appendix F, ANSI-NIST • Resolution: 500 dpi (horizontal and vertical) • Dimension (L*W*H): 14x12.5x15.1cm (5.5x4.9x5.9") • Slap print size 7,8 x 8,8cm (3.1 x 3.5") • Rolled print size 3,8 x 4cm (1.5x1.6") • EMC/Safety standards: CE, FCC • RoHS compliant • The terminal has a MTBF in excess of 50,000 hours. 	
3.	Digital Camera	<p>The digital camera being proposed should be compliant with the ICAO compliant photograph capture software being proposed in the software section of the proposal. The minimum specifications for the digital camera are</p> <ul style="list-style-type: none"> • 12 Megapixel • DSLR • USB connectivity • With all standard accessories including lens 	
4	Background Screen	<ul style="list-style-type: none"> • [1 pc] Max 4 ft x 6 ft White Backdrop • Reflective and None Gloss surface • Lightweight fabric and wrinkle-resistant • Stand & Cross Bar Included 	
5	Camera Tripod	<ul style="list-style-type: none"> • Load Capacity: 22 lb • Max Height: 62" • Min Height: 8" • Leg Sections: 4 • Max Weight: 4 lb • Traveler Lock • Shoulder Strap 	
6.	Token	Print Speed:	





Sr.#	Item	Min. Requirement
	Printer	200 mm/sec or higher Print Width: 80 mm or higher Printing Width: 72 mm or higher Driver Support Windows Families(32/64bit):7/8/10 Graphic Printing Support Print Font Support Interface USB
7.	Digital Scanner	Scanner type : Flatbed with transparent materials adapter (TMA) Size : 625 x 415 x 265 mm (24.61 x 16.34 x 10.43 inches) Scanning element : Charged-coupled device Interface : USB 2.0 Hi-Speed Optical resolution : 4800 x 4800 dpi hardware AC power : 100 to 240 volts, 50/60 Hz, 1.5 amps Media types : - 35 mm slides: Eight slides - Medium (120/220) film: Up to 6 x 9 cm (2.36 x 3.54 inch) frame - Large format: One 1.57 x 1.97 mm (4 x 5 inch) frame Media capacity : Slide: 1.05 to 3.26 mm (0.04 to 0.13 inch) thick and 49.8 to 50.8 mm (1.96 to 2 inch) on any side Power requirements : 24 volts direct current, 700 mA Automatic document feeder (ADF) specifications Size : 625 x 415 x 160 mm (24.61 x 16.34 x 6.30 inches) Weight with scanner : 15 kilograms (33 pounds) Paper tray capacity : 100 sheets of 83 g/m2 (18.2 pound bond) Maximum paper size :210 x 355.6 mm (8.5 x 14 inches) Minimum paper size : 148 x 148 mm (5.8 x 5.8 inches) Maximum paper weight : 105 g/m2 (28 pound) Power requirements - 5 volts direct current, 830 mA - 18 volts direct current, 310 mA - 32 volts direct current, 1260 mA
8.	Laser Jet Printers	<ul style="list-style-type: none">• Processor Speed: 600 MHz• Memory: 128MB• Print Quality : True 600 x 600 dots per inch (dpi) for text and graphics• Resolution Technology: FastRes 600 dpi (default) and FastRes (1200 dpi)• Language: Host-based• Print Speed: Letter size: Letter: Up to 19 pages per minute and A4: Up to 22 pages per minute• First page out : As fast as 8.5 seconds



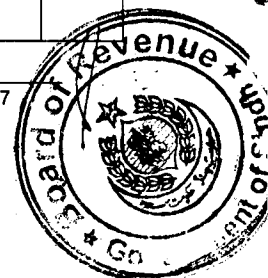


Sr.#	Item	Min. Requirement	
		<ul style="list-style-type: none"> Monthly duty cycle : Up to 5,000 sheets of paper Recommended monthly print volume: 250 to 1000 sheets of paper Duplex printing (printing on both sides of paper) : Manual duplexing Bundled Software with USB Cable Included 	
9.	Bar Code Readers	<ul style="list-style-type: none"> Hand held barcode reader with stand Decoding capability: 1D and 2D Scan Technology: Laser Scanner Type: Bi Directional Interface: USB 	
10	Switch 24, Port Patch Panel +9U Rack	<ul style="list-style-type: none"> Switch 24, port path panel +9U Rack with PDU Layer 2 Switch Required for Remote Sites Welded framework ensures a high level of strength for wall-mounting application, without any flex and twist in the cabinet. Powder-coated, neutral colored finish to blend into any surroundings Swing frame cabinets provide easy access to rear of cabinet. Front and rear mounting rails supplied so gear can be mounted to the rack as required, i.e. front, rear or both Fully adjustable, mounting rails, to suit various depths of equipment Top and bottom cable entry points to allow for easy access into cabinet lockable, framed glass front door for quick inspection of equipment without compromising security 	
11.	UPS 3KVA	<ul style="list-style-type: none"> True online double-conversion topology and zero transfer time to battery ensure high reliability Wave Form Pure sine wave Single Phase with Power Rating: 3 kVA / 2.7 kW Backup Time: 15 minute at full load Input: Nominal Voltage - 220/230/240 Vac Voltage Range 175 ~ 280 Vac (full load), 80~175 Vac (50%-100% load)Frequency Power Factor > 0.99 (full load) Current Harmonic Distortion < 3% Output: Power Factor - 0.9 Voltage 220/230/240 Vac Frequency 50/60 ± 0.05 Hz Voltage Harmonic Distortion < 3% (linear load) Operating Temperature 0 ~ 50°C Relative Humidity 5 ~ 95% (non-condensing) <p>Site Conditions</p> <ul style="list-style-type: none"> Operating Temperature Ambient: 0° to 50°C Humidity: 0% to 95% Non-condensing. 	



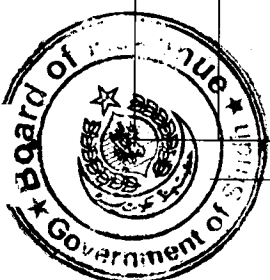


Sr.#	Item	Min. Requirement	
		<ul style="list-style-type: none">Construction: Suitable for indoor applications. <p>Protection System The UPS must support, but not limited to the following internal protection system.</p> <ul style="list-style-type: none">Short circuit.Over / under voltage Trip.Over Load Trip.Internal FaultOver Temperature <p>Battery</p> <ul style="list-style-type: none">Heavy duty maintenance free battery as per UPS manufacturer's requirement, standards and recommendation.	
12a & 12b	5 KVA and 3 KVA Generators	<p>Supply, Installation and full commissioning of Generator. Complete Civil and Electrical works including Earthing, and cabling according to full load on turnkey basis at Islamabad. Maintenance and servicing of the installed Generator during the period of warranty.</p> <p>The Works/Tasks include but not limited to the followings:</p> <ul style="list-style-type: none">Cable, Cable runways, Trenches, DuctsTesting of the GeneratorsWarranty period (One year Standard warranty) <p>The Bidder must submit authorized license specifically for Generator from OEM.</p> <p>The bidder must provide soft (CD's/Removable disc) and hard copies of compliance statement along with bid.</p> <p>The bidder must provide the original manufacturer product brochures of offered Generator and highlight the required technical data to support the compliance statement.</p> <p>Ambient conditions, Relative humidity The equipment shall be good for ambient conditions of -10°C to +55°C, 0-95% relative humidity, 1000 meters altitude and for a few stations more than 2500 meters altitude.</p> <p>TECHNICAL SPECIFICATIONS</p> <p>Engine (Make /model /rating)</p> <ul style="list-style-type: none">Governor: Mechanical / ElectricalFuel type: petrolSpeed: 1500 RPMCooling system: air CooledPower rating: Prime	





Sr.#	Item	Min. Requirement	
		<p>Alternator (Make /model /rating)</p> <ul style="list-style-type: none"> • Power factor Cos ϕ: 0.8 • Phase: single phase <p>Protection system (Preferred):</p> <ul style="list-style-type: none"> • Short circuit • Over / under voltage • Over Load Trip • Over Temperature • Over / under RPM • Low Engine Oil Protection/Alarm • Emergency shutdown button <ul style="list-style-type: none"> • Manual Start/Stop. • Battery Charger through Generator. • Volt meter, Ammeter, Energy meter, run-hour meter. • Fuel Gauge on Fuel tank. <p>Battery:</p> <ul style="list-style-type: none"> • Maintenance free battery as per Generator manufacturer's requirement and standards. <p>Accessories:</p> <ul style="list-style-type: none"> • Technical and operational manuals • Training for Site Engineers, Technical and operational staff. <p>Electrical Works:</p> <ul style="list-style-type: none"> • Complete job in all respect. Rated Wiring as per standards and manufacturer's recommendation. • Wiring from Generator set to L.T Panel(s), according to site • All equipment / wiring tagging for identification. <p>Earthing:</p> <ul style="list-style-type: none"> • Complete job in all respects as per manufacturer's requirement • Separate Earthing of Body and Generator. <p>Earth Resistance $\leq 3.0 \Omega$ (Ohms).</p>	
13.	CCTV solution	<p>Scope of Work</p> <p>The Board of Revenue intends to install CCTV Systems and other allied works as listed below for its 89 Sub-Registrar Offices located in the province of Sindh. The bidder is hereby empanelled to provide services for the installation of a CCTV solution at all 89 SRO Sites:</p> <p>The scope of installation & commissioning works include installation of all the required DVRs, Cameras, Monitors, HDD's, Cables laid in PVC conduits and training of branch staff on-site in operating the CCTV systems. The CCTV administration will take place on a decentralized level, but provision may be available for Live IP's for future use.</p>	



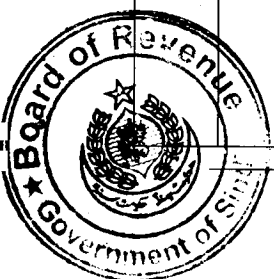


Sr.#	Item	Min. Requirement
		<p>NEW INSTALLATION & ALLIED WORKS: The nature of works include</p> <ul style="list-style-type: none">• Installation and Commissioning of CCTV systems at new / existing deficient 89 (Eighty Nine) SRO located in the province of Sindh. <p>The number of branches earmarked for installation of CCTV System as mentioned above are pertinent to this contract, any additional sites that may be required to be furnished with CCTV Systems will not be considered part of this tender.</p> <p>The Bidder must duly fill Performa and shall submit along with Tender document.</p> <p>The Bidder must submit authorized license specifically for CCTV from OEM.</p> <p>All Charges/Prices should be mentioned clearly and separately including CCTV Cameras, DVR's, HDD's, Monitors, Cables, services, consumables, warranty, preventive maintenance and all allied equipment's.</p> <p>The bidder must provide soft (CD's/Removable disc) and hard copies of compliance statement along with bid.</p> <p>The bidder must provide the original manufacturer product brochures of offered CCTV Solution and highlight the required technical data to support the compliance statement.</p> <p>Procuring Entity reserves the right to add (on the quoted price) or drop any item in the order placed on the successful bidder.</p> <p>Power Cables Power cables shall be of high quality reputed cable brand.</p> <p>Required General Specifications for DVR</p> <p>Operating System: Embedded RTOS/LINUX/WINDOWS CPU: 32 bit DSP or more powerful Minimum Internal HDD for Video Recording For 4 Ch: 2000 GB For 8 Ch: 4000 GB For 16 Ch : 8000 GB</p> <p>Video surveillance HDD : Seagate SV35 Series DVR Hard Disc, Hot Swappable</p> <p>Video Input: 4 ch / 8 Ch / 16 Ch PAL Display Speed: For 4 Ch: 100 fps, For 8 Ch: 200 fps, For 16 Ch: 400 fps</p> <p>Compression Method: Advance Video Coding (AVC), (H.264 /</p>



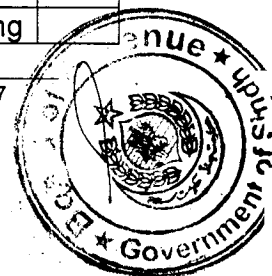


Sr.#	Item	Min. Requirement
		<p>MPEG Part 10)</p> <p>Display Split Screen(Screen Mode): For 4 Ch: 1 , 4, For 8 Ch: 1 , 9, For 16 Ch: 1 , 16</p> <p>Recording Resolution: 704 X 576/ 4CIF/D1 or more, for all channels</p> <p>Recording Speed: 25 fps at 4CIF/D1 recording resolutionper channel for all channels with flexibleframe-rate option.</p> <p>Independent RecordingSetting per channel: Continuous, Motion detection, Sensoractivated, Flexible date / timeDaily schedule.</p> <p>Watermarking: For law enforcement gradevideo authentication.</p> <p>Monitoring: 4/8/16 Ch Real time monitoringSingle mode & Quad mode, Sequential switching mode, Switching out monitoring</p> <p>Searching: Date & time based. 1 ch-searching& all-Channel simultaneous searching.</p> <p>Back up facility: In-built DVD writer and provision forexternal HDD and USB back up. Softwarefor playback of recorded images shouldautomatically be loaded onto the back-upDVD or pen-drive so that it can be viewedat any PC directly.</p> <p>Motion Detection: Support setting motion detection/Area Demarcation per camera.</p> <p>User Interface: On screen graphic User Interface</p> <p>System Recovery afterpower failure : Auto – Rebooting</p> <p>Should support full Pentaplex operation to allow simultaneousrecording, playback, live viewing, network (view remotely),administrate& back-up.</p> <p>CE/FCC/UL Certification</p> <p>Indoor IR Dome Colour Camera Specifications</p> <p>Camera Type: Indoor Fixed -focal colour Dome Camera</p> <p>Infra red feature : Minimum 24 LED ; Minimum 60 feet</p> <p>Image Sensor : 1/3" High Sensitive CCD</p> <p>Signal Format : PAL</p> <p>Effective Pixels : 750 X 580 or more</p> <p>Horizontal Resolution: Not less than 540 TVL</p> <p>Minimum Illumination (lux): 0.5, F 1.2</p> <p>S/N Ratio : 50 dB or more</p> <p>Lens : 3.6 mm fixed focal</p>





Sr.#	Item	Min. Requirement
		<p>BLC : Enhanced BLC with WDR function Operating Temperature : From – 10 degrees to +55 degrees Celsius Certification: FCC / CE / UL</p> <p>All outdoor cameras should be Colour IR Bullet cameras with WDR feature and having 6.00 mm (or more) fixed focal lenses with water proof / weather proof housing, i.e., colour cameras that switch to black & white (IR mode) automatically at night with horizontal resolution not less than 540TVL colour / 600TVL black & white. The IR cameras should have night vision of not less than 90 feet.</p> <p>Monitor 17" low-emission (LCD-TFT) monitor to support 1024 * 768 picture resolution.</p> <p>Cable Specifications RG – 6 Co-axial Unarmored Cable for Supply & Laying in ISI-Marked PVC Conduit. 2 Core 14/36 Power Unarmored Cable laid in PVC Conduits</p> <p>Training: The bidder shall arrange training for Procuring Entity employees at site to demonstrate about all aspects of the CCTV solution and their operation and maintenance.</p>
14.	Fire Proof Almirah	36" inch wide, overall size of 36"x72"x22"
15.	Fire Extinguisher	Supply and Installation of CO ₂ , 6Kg fire extinguisher bottle
16.	Office Chairs	Officer chairs with synchro tilt / center tilt mechanism high back moulded foam & ply, 5 pronged pedestal, twin wheel pin castors Polyurethane armrests leatherite / fabric upholstery as per approval of Engineer in charge
17.	Office Tables / Computer Tables	Tables-Providing and fixing tables of (5'-0"X2'-6"X2'-6") to be made up of 19mm MR ply, having CPU stand, a keyboard tray drawer unit etc. All exterior surfaces to be duly laminated and finished using 1.00 mm laminate with necessary hardware such as handles, wire manager, telescopic drawer slides. All exposed edges to be finished with 1st quality rubber wood beading which is to be melamine polished and all inside surfaces to be finished with .8 mm half white laminate.
18.	Visitor Chair	Visitor chair with sturdy powder coated ms tubular structure molded foam & ply. Polyurethane armrests leatherite fabric upholstery
19.	Floor Tiles	Providing and fixing joint free 'A' quality Ceramic Tiles Flooring



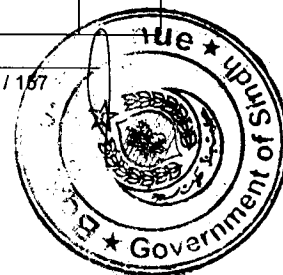


Sr.#	Item	Min. Requirement	
		of size 300x300 in antiskid Flooring in shades of white. Sample to be approved by Board of Revenue, Sindh.Engineer over 12 mm thick bedding/backing plaster in Cement Mortar 1:5 (1 Cement :3 Coarse sand) and fillingthe joints with matching pigment white cement slurry@3.3kg per sqm including pointing.	
20.	False Ceiling	GYPSBOARD FALSE CEILING Providing and fixing ½"thk. Rate shall be inclusive of all Gypsum components with perimeter channels of size 0.55 thick having one flange of 20mm and another flange of 30mm and a web of 27mm along with perimeter of ceiling, screw fixed to brick wall/partition with the help of nylon sleeves and screws, at 610mm centers. The suspending intermediate channels of size 45mm, 0.9mm thick with two flanges of 15mm each from the soffit at 1220mm centres with ceiling angle of width 25mm x 10mm x 0.55 thick fixed to soffit with cleat and steel expansion fasteners at every 610mm c/c. Ceiling sections of 0.55mm thickness having knurled web of 51.5mm and two flanges of 26mm each with lips of 10.5mm are then fixed to intermediate channel with the help of connecting clip and in direction perpendicular to the intermediate channel at 457mm centres. 12.5mm tapered edge Gypboard is then screw fixed to ceiling section with 25mm drywall screwdriver or drilling machine with suitable attachment. The boards are to be jointed and finished so as to have a flush look which includes filling and finishing the tapered and square edge of the boards with jointing compound & joint paper tape. Rate shall be inclusive of any vertical ceiling part, spot, tube light, A. C. Grills, fire and security systems cut outs including two or more coating approved system enamel paint to give an even shade, All Sections should adhere to the manufacturers guidelines and contractor has to submit the Gypsum India certificate on using the India Gypsum sections & boards. Refer attached sheet along with drawings for details	
21.	Partition	Providing & fixing at site wooden partitions (68mm thick) with framework of approved quality seasoned wood (second class Teak) section 50x38 mm at 600mm c/c both way duly treated with approved quality Anti termite & fire resistance paint, covered with 8mm MR ply on both sides with cable tray for running LAN cable & power cable, finished with 1.00mm laminate or wall paper or plastic paint. All exposed edges to be finished with 1 st Quality rubber wood / T.W beading of size 65x10 mm which is to be melamine polished. as per drawing details. All exposed edges of glass to be polished, as per drawing detail. The cost is inclusive of all materials, labour etc. complete.	
22.	Painting Work	Painting of Acrylic emulsion paint on wall surface of approved brand and shade of approved colour in two or more coats including , two or more coat of ready-made putty to give a smooth shade to the	
23.	Window Coverings	Providing and fixing of Venetian blinds Both side Coated with Blackout Fabric, Coating is of PU. Max. Width 2.50 M; with	





Sr.#	Item	Min. Requirement	
		smooth operating roller rods of approved shade and quality	
24	Wiring / Cabling	Supply & Installation of concealed point wiring using 600v grade 1.5 sqmm copper conductor PVC insulated wires (with proper R,Y,B color code) pulled through heavy gauge PVC conduits laid concealed over false ceiling or in wall chases or on the ceiling in case of an open ceiling including 2.5 sqmm circuit wires from the relevant DB and also including 2.5 sqmm green color copper earth wire and switch plate, switches, etc. as approved by the BoR. (Each circuit shall not feed more than 8 points OR 800 watts as per following configuration	
25	Distribution Board	<p>Main LT Panel / DB</p> <p>Supply installation, testing & commissioning of 400A IC TPN SFU with 315A HRC fuses 440V 3 phase & neutral 50 c/s AC23 duty on MS angle iron frame fabricated out of 40mm x 40mm x 5mm MS angle duly painted with cable end boxes, earthing, name plate danger board fixing accessories etc.</p> <p>Main Electrical LT Panel Supply and Installation of main LT panel, floor ' mounted, front operated, dead back, totally enclosed vermin proof, indoor, non-drawout, cubicle type power dist. Panel fabricated out of 2mm thick CRCA sheet having gasketed hinged door on each cubicle, fully powder coated / enamel painted after seven tank treatment, incorporating horizontal and vertical sleeved copper / aluminum busbars 'complete with all internal wiring, danger board, two earthing lugs, cable chamber etc. as required 'housing below mentioned switchgears / meters</p> <p>INBUILT APFC PANEL</p> <p>With inbuilt solid state automatic power factor correction arrangement having microprocessor based control circuit and thyristor switching power circuit having a required capacity of 60KVAR having capacitor bank in steps of 1 x 20 KVAR + 4 x 10 KVAR, including main MCCB, MCB's, APFC relay, contactors, capacitors, indicating lamps, etc. complete with all necessary hardware & accessories</p> <p>Specifications</p> <p>1 no., 400A, 415V 50Hz FP MCCB complete with neutral & accessories as incomer with O/L, S/C protections</p> <p>1 no. 4P Voltage Surge Protector / Arrestor including LED indicators alongwith necessary accessories.</p> <p>2 Nos., 125A, TPN, MCCB as outgoing complete with neutral & accessories</p> <p>Outgoing's -</p> <p>8 Nos., 63/40A, TPN, MCB as outgoing complete with neutral & accessories</p> <p>3 Nos., 40/32A, DP, MCB as outgoing complete with neutral & accessories</p> <p>1 Set of 400A TPN tinned Copper busbar with PVC sleeving & accessories</p> <p>1 Set, RYB, indicating lamps with resistors and fuses</p> <p>Load Manager with RS 485 port indicating Pf, KW, KVA, KVAR with class A CT- 1 no</p>	





Sr.#	Item	Min. Requirement	
		Supply and installation of 6-way, TPN, Lighting & Raw Power Distribution Board (LDB+PDB), flush mounted on wall, interconnected wiring complete with earthing lugs housing following switch gears: a. 1no. 63A, TP MCB as incomer, b. 18 nos, 16/25A, SP, MCB outgoing.	
26	Ceiling Fans	Supply & Fixing of 1200 mm sweep Crompton Make High Speed Ceiling fan with standard down rod, all accessories Electrical connections. Including fixing materials required.	
27	LED Lighting Fixtures /Solution	Supply & Installation of a combination of (39W) (2' X 2') LED Light fixture and (10-15W) LED Spotlight mounted light fixture. The fitting shall be surface mounted / to be hanged from the ceiling / false ceiling, at the height approved by BoR. LED 6K Product Code: Equivalent in PHILIPS /GE make as approved by Board of Revenue	
28	Split AC	Split AC 1.5 Ton with 1 year warranty	
29	Network Point (I/O's Cat 6 cable Connector with Faceplate)	<ul style="list-style-type: none"> I/O Cat 6 Cable with Faceplate 2 Gang Wall Plate Wallplate 1 RJ45 Cat 6 Data Network LAN Jack 	
30	Paper Shredder	<ul style="list-style-type: none"> Shredding Capacity 15-200 sheets Mouth Capacity 220mm – 500mm Strip Cut size 3mm-6mm Paper size A3 & A4 Bin capacity Minimum 200 ltrs 	
31	Electrical Switch 4in 1 Complete	<ul style="list-style-type: none"> Electrical Switch (4 in 1) 4 Gang, 250V AC 16AX - 1 way / 2 way Push Button Mounting with Screw LED Indicator 	

4.4 Network Connectivity

4.4.1 Summary

Sr. #	DESCRIPTION	QTY
NETWORK EQUIPMENT SECTION		
1	Fully redundant (1:1) IPsec VPN solution at Central Site (HQ BOR SINDH))	3 (2 x redundant at central site) (1 x DR site)
2	Compliance, Monitoring, Logging & Management Segment	1
3	Network Link Monitoring	1
	Remote Site Firewall device	99
	USB Dongle for computer for wireless	15



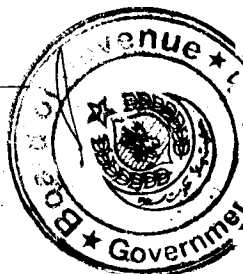


	connectivity (includes SIM)	
Network Links Section		
1	Primary DSL / Fiber Links (remote sites and NADRA to central site)	101 (99 X REMOTE SITES TO CENTRAL) (1 X NADRA TO CENTRAL(2Mbps) (1 X CENTRAL TO DR (5Mbps))
2	Backup Wireless Links (remote sites and NADRA to central site)	101 (99 X REMOTE SITES TO CENTRAL) (1 X NADRA TO CENTRAL(1Mbps) (1 X CENTRAL TO DR(3Mbps))
3	Redundant Backhaul Link	2 (CENTRAL AND DR SITE)
4	Point-to-point 3G/4G/EVDO Connectivity	(15 x USB Dongles) 30GB per month per device. The USB devices will link the remote computers to the central site
5	Central Site Backup fiber optic Link	1 x 2Mbps link (Central site and operator network)
SMS Gateway Service		
1	Broadcast SMS	for 3 years (1,080,000 SMS /year)

4.4.2 Scope of Work

The RFP consist of two sections i.e. (1) Network Equipment and (2) Network connectivity whereas whole RFP is for a turnkey project for delivery, deployment, testing, configuration, commissioning, training, warranty, services and support. Following points illustrate Scope of Work (SoW) of this RFP:

- The Bidder shall propose a complete system, which can satisfy the system requirements, described, including but not limited to conducting site survey, design, system supply, installation, integration, training, testing, commissioning, services, support and warranty.
- Performing supply, site survey, system design, installation, integration, testing and commission of the central site infrastructure, central site backhaul link, remote site network links and installation of hardware/software at remote sites.
- Bidder shall be responsible for Hardware/software installation at central and remote sites, network links installation at central and remote sites with Ethernet handoff at both ends.
- Integrating the System into the existing Customer infrastructure.
- Warranty of Equipment.
- Comprehensive Project Plan indicating Milestones along with Dependencies included but not limited to following:
 - Deployment plan
 - Resource Allocation





- Risks Assessment
 - Progress Reporting Procedures
 - Bidder shall submit "Project Timelines" with proposal.
- All proposed network links must provide Ethernet Handoff at Central Site and Remote site
- Provision of comprehensive Test Plan (NRFU/PAT) for installed solution. Tests should include but not limited to complete end to end testing of the solution/networks resiliency, redundancy, performance, security and convergence features, Hardware, Software, Licenses, and Features along with verification of all CLIENT services. Stress testing on central site infrastructure. This would be required to sign off this project.
- Certified Trainings mentioned in training section of this document and BoQ should be comprehensive (theoretical & hands on) and should cover all hardware, configuration & operational requirements in accordance with Proposed Solution purchased. Contractor will bare all expenses related to Certified Training. The training should be delivered well before the delivery of the Equipment.
- After successful deployment of each remote site link, contractor will conduct PAT (Provisional Acceptance Testing) and get it signed off.
- Provision of below mentioned Technical Documents
 - High Level Design (HLD)
 - Low Level Design (LLD)
 - Network Implementation Plan (NIP)
 - Migration Strategy along with Fall Back Procedures
 - Comprehensive Testing Plan (NRFU/PAT)
 - Step by Step Configuration Documents
 - Equipment Manuals
 - Other documents mentioned in Documentation section of this RFP
- All Licensing required to fulfill CLIENT requirements should be part of solution.
- Life of all Licenses must be of total contract duration which can be extendable. All licenses must be on name of BOR Sindh.
- Other miscellaneous assignments/works.
- Further detail is given in other sections of this RFP which also reflects SoW of project.
- Central site bandwidth must be CIR cumulative bandwidth of all remote sites.
- Redundant backhaul Link with alternate path from CLIENT HQ to Operator Network
- Integration of Backhaul link with central infrastructure so that auto Switchover of primary link to back up in case of failure in active link.

Point-to-point 4G/3G/EVDO connectivity

- BOR Sindh requires wireless connectivity from remote locations with BOR Sindh central site Karachi. Vendor will provide USB Dongle with 3G/4G/EVDO SIM Installed. This USB Dongle device must connect a private APN and SIM/Device will get Private IPs. Vendor then route these remote site's IPs towards BOR Sindh central site VPN Server IP. Once device able to reach VPN server then remote site user's System/PC will launch VPN tunnel with BOR Sindh central site VPN Server to access the required services.





- Vendor will provide 15 x Dongle Device, SIM of 3G/4G/EVDO, backhaul link from operator to central site and end to end connectivity from remote site to Central site over Private IPs.
- Vender must provide the coverage maps
- 15 x Remote sites and 1 x Central Site.
- Vender must provide support infrastructure
- Vender must ensure that there is no internet access on these devices (remote sites)
- Vendor must repair/replace equipment in case of any device provided is faulty.
- Backhaul must be established between operator network and BOQ Sindh Central Site Karachi over Fiber optic link 2Mbps.

4.4.2.1 Network Equipment Section

Delivery, installation, testing, training, support and Warranty that includes: -

- Fully 1:1 Redundant Central Site Infrastructure with all features, hardware, software and licenses mentioned in this RFP.
- Remote Sites Firewalls
- Technical support direct from Principal for the first three years of operation.
- LAN infrastructure at Remote Sites

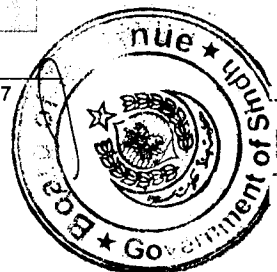
4.4.2.2 Network Connectivity Section

- All sites will be connected to the central site. The operator will be responsible to shift the traffic to DR sites automatically in case of disaster at central site
- CIR Bandwidth from any remote site to CLIENT HQ Karachi over Private IP Cloud as per below mentioned requirement:
- **Primary Link DSL / Fiber:** 1Mbps CIR Upload and 1Mbps CIR Download on 95 x sites and 2Mbps CIR Upload and 2Mbps CIR Download on 6 x sites (BOR Camp office, Inspection Office KHI & Hyderabad, SRO Clifton-I, Gulshan Iqbal-II, and Saddar-I)(Note: Fiber optics connectivity is recommended as primary link where available)
- **Backup Link Wireless Connectivity**e.g. VSAT, wimax, P2P, P2MP etc. 512Kbps CIR Upload and 512Kbps CIR Download on 95 x Remote sites and 1Mbps CIR Upload and 1Mbps CIR Download on 6 x sites (As sites mentioned above)
- **Redundant Backhaul Links:** Bandwidth of Backhaul links must be cumulative CIR Bandwidth of all remote sites. Backhaul link is the link between Operator and Central Site to route all remote site traffic to central site.
- **Point-to-point 3G/4G/EVDO Connectivity:**point-to-point connectivity to the central site with 30GB limit per device
- Central Site Backup fiber optic Link: 2Mbps fiber optic link between the network operator of the 3G/4G/EVDO point-to-point connectivity provider, and the central site.

4.4.3 Detailed Bill of Quantities

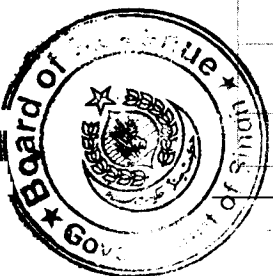
4.4.3.1 Network Equipment

VPN Concentrator
((Qty = 3) Fully redundant (1:1) IPsec VPN solution at Central Site (HQ





CLIENT))	
S.No.	Requirement
1	Fully redundant (1:1) IPsec VPN solution at Central Site (HQ CLIENT) with no single point of failure.
2	Each Devices should support and scalable up to 500 IPsec VPN Tunnels. 300 IPsec VPN Tunnels licensing should be quoted with solution for Each Device.
3	8 X GE usable interfaces should be available on each proposed device.
4	Optional Both End 2 x 10 G SFP+'s should be provided
5	Remote Sites will be required to launch IPsec VPN with HQ CLIENT through remote end firewall via P2P (Private Network)
6	Central Site infrastructure should be fully compatible with different vendor's Remote End
7	Proposed solution should have adequate OSPF Areas & LSA capabilities w.r.t. mentioned load.
8	Should have Active/Active & Active/Standby Configuration
9	Should support and fully licensed with IPS & UTM Features.
10	AV Licensing for central site should be quoted along with the solution.
11	Highly reliable
12	CPU Performance of proposed devices should not reach 30% with full load.
13	Provides security zones & VLANs that allow administrators to deploy security policies.
14	Fine grained application control policies to allow or deny traffic.
15	Should support comprehensive NAT features and functions critically required IPv6 to/from IPv4 and vice versa features
16	Should have redundant power supplies. Devices should operate through AC Power.
17	Centralized Policy Enforcement & Management Mechanism should be part of solution as mentioned in "Compliance, Monitoring, Logging & Management Segment" section of compliance sheet
18	Dedicated hardware designed for networking and security services.
19	Extendable Interfaces (module based)
20	Proposed device must support IPSEC Branch to Branch and IPSEC/PPTP/SSL user tunnel.
21	Software should be provided for user tunnel creation when required
22	Firewall throughput should be equal or greater than 1Gbps with all configured and supported features.
23	Maximum AES256+SHA-1 VPN performance should be equal or greater than 1Gbps
24	Maximum IPS performance should be equal or greater than





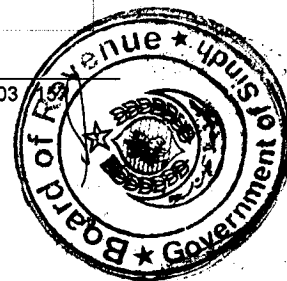
	1Gbps
25	Maximum concurrent sessions should be equal or greater than 1 Million
26	Must be modular
27	Maximum security zones greater than 100
28	Maximum number of VLANs greater than or equal to 4096
29	Configuration rollback should be available.
30	Real Time updates
31	Antivirus Throughput equal or greater than 1Gbps
32	Fully support and licensed with routing protocols OSPF, BGP etc
33	Quoted Product Should not be End of Life/Sale for Prevailing 5 Years & End of Support for Prevailing 7 Years from date of order

Compliance, Monitoring, Logging & Management Segment
Qty = 1

S.No.	Requirement
1	Solution should have Redundant strong & comprehensive Compliance, Reporting, Logging & Monitoring solution (software + Hardware). Complete VPN Concentrator should be served by it.
2	Event Reporting, Logging & Backtracking should be ensured for at least past 3 months.
3	Monitoring & Reporting should enrich with all latest feature set.
4	Provides a comprehensive log management and reporting solution
5	Software must integrate all centralized equipment and remote site firewalls

Network Link Monitoring Qty = 1

S.No.	Requirement
1	Should provide traffic graphs, availability graphs, packet losses etc for Backhaul Link and 300 remote sites/links with historical reporting and Dashboard view.
2	Solution should allow administrator to create region-wise maps for network links, provide top utilized network traffic nodes, top packet loss network nodes, provide customized reporting to fetch data based on following: <ul style="list-style-type: none"> Report based on %age availability Reports based on configurations like same region nodes, same network connectivity type nodes, any other option that user want to customize Reports based on %age packet loss





	<ul style="list-style-type: none">• Reports based on latency• Reports based on Network traffic utilization with Top and Bottom nodes• Other customized reports
3	Hardware for this Software is also required
Remote Firewall Qty = 99	
S.No.	Requirement
LAN interface options	
	Required layer 3 Ethernet Interfaces at least 7 x 10/100
Performance	
1	Required Firewall Throughput 20 Mbps or more with all features
2	Required IPsec VPN Throughput 20 Mbps or more
3	Number of Security Policies 350 or more
VPN Features	
1	Concurrent VPN tunnels 5 or more
2	Tunnel interfaces 5 or more
3	DES (56-bit), 3DES (168-bit), and AES encryption
4	MD5 and SHA-1 authentication
5	Perfect Forward Secrecy Group 1,2,5
6	Prevent replay attack
7	Remote access VPN
8	RAM and CPU must not increase from 35% with fully load
9	IPSEC Branch to Branch Tunnel
Routing	
1	Static Routes 4k or more OSPF Instances 4K or more
2	OSPF routes 4K or more
3	Source-based routing
4	Policy-based routing
5	Equal-cost multipath



6	Reverse Path forwarding
Administration	
1	Root admin, admin, and read-only user levels
2	software upgrades
Management	
1	Centralized Management
2	Local Management
3	Secure Shell Access
End of Sale/Life & Support	
1	Quoted Product Should not be End of Life/Sale for Prevailing 4 Years & End of Support for Prevailing 7 Years from date of order
USB Dongle for p2p wireless connectivity	
S.No	Requirements
1	USB devices with pre-installed SIMs. Should not require external power.

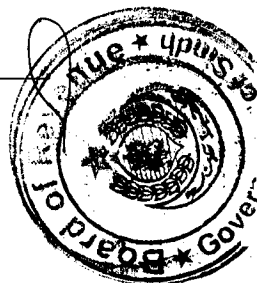
4.4.3.2 Network Connectivity

Primary Link: 80% or more DSL/Fiber Coverage with 1Mbps CIR Upload and 1Mbps CIR Download from 95 x remote site to CLIENT HQ Karachi over Private IP Cloud and 2Mbps CIR Upload and 2Mbps CIR Download from 6 x remote site to CLIENT HQ Karachi over Private IP Cloud. Remaining Sites must be made feasible by using any other technology with Same CIR Upload and download requirement.

Backup Link: -100% WiMax/Wireless (P2P, P2MP), VSAT Coverage with 512Kbps CIR Upload and 512Kbps CIR Download from 95 X remote sites to BOR Sindh Karachi over Private IP Cloud and 1Mbps CIR Upload and 1Mbps CIR Download from 6 x remote site to BOR Sindh Karachi over Private IP Cloud.

Redundant Backhaul link from Operator Network to CLIENT HQ Datacenter over Private IP Cloud with CIR bandwidth = Cumulative CIR Bandwidth of all Remote Sites (If backhaul already established then only bandwidth upgrade is required).

Primary Network Connectivity (P2P DSL/Fiber)





Sr. #	Item Specification
1	P2P DSL/Fiber connectivity with 1Mbps CIR Upload and 1Mbps CIR Download on 95 x sites and 2Mbps CIR Upload and 2Mbps CIR Download on 6 x sites 1Mbps CIR upload on remote site mentioned in Annex-A to CLIENT HQs over private IPs.
2	CIR bandwidth should be 1Mbps CIR Upload and 1Mbps CIR Download on 95 x sites and 2Mbps CIR Upload and 2Mbps CIR Download on 6 x sites as per detail given in Pakcage-A
3	Vender must provide the coverage maps
4	Vender must provide support infrastructure
5	24X7X365 remote and onsite support with single POC in each region
6	Vender must ensure that there is no internet access on remote site.
7	Vendor must repair/replace equipment in case of any device provided is faulty without any further charges paid by CLIENT.
8	Bidder shall establish backhaul link to connect operator network with CLIENT HQ Karachi. Ethernet / Fiber Hand off would be provided at CLIENT HQ. If interconnect not already established at CLIENT, then vendor should deploy a Layer 3 Switch with Fiber Ports connected to Ring Infrastructure without any additional cost.
9	Ethernet handoff at remote and central site
10	Installed or Provided Equipment should be in warranty & support and this cost should be included in MRC.
11	Equipment proposed/installed should be of reputed vendor.
12	Technical (Email/Phone) & Onsite Support cost should be included in MRC.
13	Relocation of sites would be facilitated without any extra charge.
14	Aggregate Link at CLIENT HQ will be provided with no contention ratio without any extra cost.
15	Payment of sites will be started after deployment and acceptance of all sites from CLIENT.
16	Payment will be made on quarterly basis after service.
17	Bidder shall arrange a visit at its datacentre / NOC to demonstrate and present complete network infrastructure of proposed network connectivity solution.



**Backup Network Connectivity (P2P WiMax/Wireless/P2MP/VSAT)**

Sr. #	Item Specification
1	P2P WiMax/Wireless/P2MP/VSAT connectivity with 512Kbps CIR Upload and 512Kbps CIR Download on 95 x Remote sites and 1Mbps CIR Upload and 1Mbps CIR Download on 6 x sites mentioned in Annex-A to CLIENT HQs over private IPs.
2	CIR bandwidth should be 512Kbps CIR Upload and 512Kbps CIR Download on 95 x Remote sites and 1Mbps CIR Upload and 1Mbps CIR Download on 6 x sites
3	Vender must provide the coverage maps
4	Vender must provide support infrastructure
5	24X7X365 remote and onsite support with single POC in each region
6	Vender must ensure that there is no internet access on remote site.
7	Vendor must repair/replace equipment in case of any device provided is faulty without any further charges paid by CLIENT.
8	Bidder shall establish backhaul link to connect operator network with CLIENT HQ Karachi. Ethernet / Fiber Hand off would be provided at CLIENT HQ. If interconnect not already established at CLIENT, then vendor should deploy a Layer 3 Switch with Fiber Ports connected to Ring Infrastructure without any additional cost.
9	Ethernet handoff at remote and central site
10	Installed or Provided Equipment should be in warranty & support and this cost should be included in MRC.
11	Equipment proposed/installed should be of reputed vendor.
12	Technical (Email/Phone) & Onsite Support cost should be included in MRC.
13	Relocation of sites would be facilitated without any extra charge.
14	Aggregate Link at CLIENT HQ will be provided with no contention ratio without any extra cost.
15	Payment of sites will be started after deployment and acceptance of all sites from CLIENT.
16	Payment will be made on quarterly basis after service.





17	Bidder shall arrange a visit at its datacentre / NOC to demonstrate and present complete network infrastructure of proposed network connectivity solution.
----	--

4.4.4 Bandwidth Requirement

Solution and Connectivity links must support, equipped and fully licensed with following upload and download bandwidth requirements.

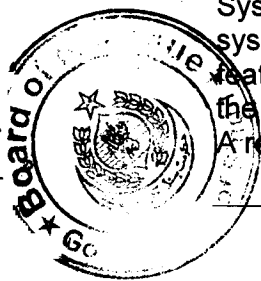
Item	Description	Upload Bandwidth	Download Bandwidth
For Primary and Backup links	Central and DR Site Backhaul Link	Cumulative CIR Upload Bandwidth of all remote sites.	Cumulative CIR Download Bandwidth of all remote sites.
For Primary Link only	Per Remote Site Bandwidth Requirement for 95 x Sites	CIR 1Mbps	CIR 1Mbps
	Per Remote Site Bandwidth Requirement for 6 x Sites	CIR 2Mbps	CIR 2Mbps
For Backup Link Only	Per Remote Site Bandwidth Requirement for 95 x Sites	CIR 512Kbps	CIR 512Kbps
	Per Remote Site Bandwidth Requirement for 6 x Sites	CIR 1Mbps	CIR 1Mbps

4.4.5 SMS Gateway Service

The bidder will provide an SMS gateway service at the datacenter. The service will be exposed to the e-Registration System to broadcast messages. The network connectivity (private network) for the SMS gateway will be the responsibility of the bidder. The interface with the SMS gateway will be setup on service based architecture. Bidders will quote for 3 years for a quantity of 90,000 per months and 1,0,80,000 per year SMS to any mobile network.

The SMS gateway should also be able to provide a request/response architecture where an SMS can be sent by an individual which will be received at e-Registration System and the gateway will be responsible to return the response provided by the system. The scope will include provision of short-code on all mobile operators for this feature. The financials of this will not be quoted in this bid but will be negotiated with the successful bidder.

A reporting interface will be provided to reconcile all transactions.





4.4.6 Documentation

The following documentation will be required from the successful bidder during and after deployment of the solution.

- Network Implementation Plan (NIP) and Design
- Cabling Detail and Drawing
- Operation & Maintenance Manual
- Testing & Commissioning Procedure and Report
- Standard Installation Procedures (step-by-step)
- System overview
- Detailed user manual
- Installation document
- Operational issues and standards SOPs
- Configuration Backup and Recovery Procedure
- Manual testing and system diagnostics etc.
- Equipment Manuals

4.4.7 Testing, Commissioning and Equipment Certification

4.4.7.1 General

The Bidder shall propose testing and commissioning plans including the detailed procedures and test equipment required for the proposed System.

4.4.7.2 System Acceptance Test (SAT)

The Bidder shall propose the procedures to perform system tests upon completion of sub-system installation. The Customer shall witness these SATs. The SATs shall be performed upon completion of all sub-system and other tests (including any test on the measuring equipment and spare parts) as necessary to ensure that the System is functioning as designed and ready for acceptance by Customer.

Successful conclusion of the SAT tests is the Customer's pre-requisite for final system acceptance.

4.4.7.3 Test Equipment and Test Tool Kit

The Bidder shall as necessary make available test and measurement equipment and test tool kits that are required for local and SAT test procedures.

5 General Instruction

All procurement activities to be conducted by the selected vendor and all relevant equipment needs to be warehoused at vendors own location.

The bidder is required to point out any deviation or missing item in BoQ or in technical specification, which is overlooked but necessary for any solution (Supply, Installation, Testing & Commissioning) in the compliance statement. Contractor will be responsible to provide that item without any argument and cost whenever highlighted at any stage or during work execution.





The bidder shall execute the works with materials in accordance with the Specifications. All materials which in the opinion of the Procuring Entity are not sound and/or do not meet with the above condition, shall be immediately dismantled and/or removed from the site by the bidder at the request of the Procuring Entity and replaced by appropriate approved materials without claim by or extra payment to the bidder. The bidder shall also be responsible for the dismantling of the site work for the new installation work if required without any new additional cost.

5.1 Preventive maintenance

In case of Maintenance Contract is signed, the bidder shall be bound to provide services / maintenance on-time and shall be penalized in case of late services / maintenance / backup support.

5.2 Bidder guarantee

The bidder shall give written guarantee along with manufactures make, model & year of manufacture that all the equipment, allied equipment and materials supplied under the contract are original & brand new, of robust construction and standard manufacture and that the materials and workmanship shall be of best class. The equipment shall be installed in a practical and first-class manner and that the Site and system shall be complete and ready for operation, nothing bearing omitted by way of labor and material required to make them so, although not specifically shown or mentioned in the specifications or in the drawings, and that these would be delivered to the Procuring Entity in well working order complete and perfect in every respect.

5.3 Warranty & Support

The bidder should be responsible for support and maintenance for Hardware, IT & Electrical Equipment, Fixture & Furniture and similarly for 1 year (24x7) including Hardware and Software warranty and support back to back onsite OEM support.

The Bidder should also be responsible for support and maintenance for 3 years (24x7), 95% uptime of Network, Communication and SMS gateway and indicate the support capabilities in the following format:

	Item	Action Item	Maximum Resolution Time
1	IT Hardware and Electronic Equipment	Repair	01 Week
		Re-Configuration	1 Calendar Day
2	Support & Maintenance for IT Network, Communication and SMS gateway	Troubleshooting/Tune-up	1 Calendar Day
		Re-Configuration/Installation	3 Calendar Days
3	Furniture, Fixtures and Civil Work	Repair	3 Working Days
		Polish and Finishing	1 Working Days

Support and maintenance must be renewable on demand for next years

5.4 Acceptance Certificate

The Procuring

Entity





shall arrange acceptance testing and commissioning of the Site(s) and equipment under the supervision of the Engineers of the Procuring Entity Team.

equipment

5.5 End of Sale/Life & Support

Quoted Product Should not be End of Life/Sale for Prevailing 4 Years & End of Support for Prevailing 7 Years from date of order

6 Project Activity Milestones

S. No.	Milestone	Timeline
1	Supply, installation and commissioning of Hardware and Networking at Data Center, PMU, Karachi, Board of Revenue Sindh	60 days after signing of contract
2	Supply, installation and commissioning of Hardware and Networking at Disaster Recovery, Hyderabad, Board of Revenue Sindh	60 days after signing of contract
3	Submission of Software Requirements Specification	30 days after signing of contract
4	User Acceptance Testing concluded for Phase I model	70 days after Milestone no. 3
5	Supply, installation and commissioning of Hardware, Networking, Civil work, fixture and furniture, Deployment of Phase I model of Application at first pilot SRO	Within 7 days after completion of Milestone no. 4
6	Supply, installation and commissioning of Hardware, Networking, Civil work, fixture and furniture, Deployment of Phase I model of Application at second pilot SROs	15 days after completion of Milestone no. 5
7	SROs of District Karachi - Supply, installation and commissioning of Hardware, Networking, Civil work, fixture and furniture, Deployment of Phase I model of Application.	30 days after completion of Milestone no. 6
8	SROs of District Hyderabad - Supply, installation and commissioning of Hardware, Networking, Civil work, fixture and furniture, Deployment of Phase I model of Application	15 days after completion of Milestone no. 7
9	SROs of entire Sindh - Supply, installation and commissioning of Hardware, Networking, Civil work, fixture and furniture, Deployment of Phase I model of Application	Within 60 days after completion of Milestone no. 8
10	System Integration Testing for Phase II model (submission of error free test result)	Within 15 days after development of e-Stamps system
11	User Acceptance Testing concluded for Phase II model	15 days after completion of Milestone no.10





S. No.	Milestone	Timeline
12	Deployment of Phase II model as first pilot SRO	15 days after completion of Milestone no. 11
13	Deployment of Phase II model as second pilot SRO	15 days after completion of Milestone no. 12
14	SROs of District Karachi - Rollout completed Phase II model	15 days after completion of Milestone no. 13
15	SROs of District Hyderabad - Rollout completed Phase II model	15 days after completion of Milestone no. 14
16	SROs of entire Sindh - Rollout completed Phase II model	15 days after completion of Milestone no. 15
17	Central system deployment including operating system database and other requirements	Within 10 days after completion of Software Development and System Integration Testing
18	Trainings Phase I model of e-Registration system	Within 30 days after completion of Milestone no. 4
19	Trainings Phase II model of e-Registration system	Within 30 days after completion of Milestone no. 11
20	3 Years Maintenance and Support	(from the effective from the date of installation and commissions of hardware, fixture and furniture and similarly from the date of deployment of software and networking solutions

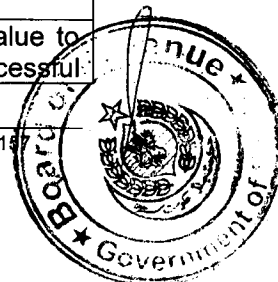
6.1 Payment Schedule

6.1.1 Software Design Development and Deployment

S. No.	Milestone	Payment Schedule and condition
1	Submission of Software Requirements Specification	10% of total cost of Software Development, Testing, Deployment and Rollout to be paid upon submission of the SRS document and the acceptance thereof by M/s NADRA
2	User Acceptance Testing concluded for Phase I model	20% of total cost of Software Development, Testing, Deployment and Rollout to be paid upon successful completion of the task and the acceptance thereof by M/s NADRA
3	Deployment of Phase I model of Application at first pilot SRO	10% of total cost of Software Development, Testing,



S. No.	Milestone	Payment Schedule and condition
		Deployment and Rollout to be paid upon successful completion of the task and the acceptance thereof by M/s NADRA
4	SROs of District Karachi - Deployment of Phase I model of Application.	10% of total cost of Software Development, Testing, Deployment and Rollout to be paid upon successful completion of the task and the acceptance thereof by M/s NADRA
5	SROs of District Hyderabad - Deployment of Phase I model of Application	10% of total cost of Software Development, Testing, Deployment and Rollout to be paid upon successful completion of the task and the acceptance thereof by M/s NADRA
6	SROs of entire Sindh - Deployment of Phase I model of Application	10% of total cost of Software Development, Testing, Deployment and Rollout to be paid upon successful completion of the task and the acceptance thereof by M/s NADRA
7	User Acceptance Testing concluded for Phase II model	10% of total cost of Software Development, Testing, Deployment and Rollout to be paid upon successful completion of the task and the acceptance thereof by M/s NADRA
8	SROs of District Karachi - Rollout completed Phase II model	10% of total cost of Software Development, Testing, Deployment and Rollout to be paid upon successful completion of the task and the acceptance thereof by M/s NADRA
9	SROs of District Hyderabad - Rollout completed Phase II model	5% of total cost of Software Development, Testing, Deployment and Rollout to be paid upon successful completion of the task and the acceptance thereof by M/s NADRA
10	SROs of entire Sindh - Rollout completed Phase II model	5% of total cost of Software Development, Testing, Deployment and Rollout to be paid upon successful completion of the task and the acceptance thereof by M/s NADRA
11	Trainings Phase I model of software	60% of the total training value to be paid upon successful completion of the task and the acceptance thereof by M/s NADRA
12	Trainings Phase II model of software	40% of the total training value to be paid upon successful completion of the task and the acceptance thereof by M/s NADRA





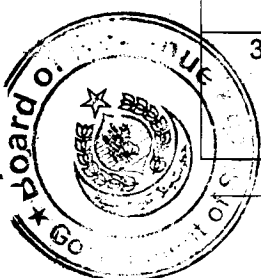
S. No.	Milestone	Payment Schedule and condition
		completion of the task and the acceptance thereof by M/s NADRA
13	Maintenance and Support	100% of the cost of Maintenance and Support on the basis of actual value to be paid upon successful completion of the task and the acceptance thereof by BoR Sindh

6.1.2 Central Site & Disaster Recovery Site H/W Requirement

S. No.	Milestone	Payment Schedule and condition
1	Supply, installation and commissioning of Hardware at Data Center, PMU, Karachi, and DR Center, Hyderabad, Board of Revenue Sindh	100% of the IT Hardware Equipment of Package B on the basis of actual cost (excluding License cost) to be paid upon supply, installation and commissioning of Hardware and acceptance thereof by M/s NADRA.
2	MS Windows, Windows CAL, etc.	100% of the total License value to be paid upon successful completion of the task and the acceptance thereof by M/s NADRA
3	Maintenance and Support	100% of the cost of Maintenance and Support on the basis of actual value to be paid upon successful completion of the task and the acceptance thereof by BoR Sindh

6.1.3 Site Hardware, Electrical Equipment and Civil Work

S. No.	Milestone	Payment Schedule and condition
1	SROs of District Karachi - Supply, installation and commissioning of Hardware, Civil work, fixture and furniture.	30% of the total cost of Package C value to be paid upon successful completion of the task and the acceptance thereof by M/s NADRA
2	SROs of District Hyderabad - Supply, installation and commissioning of Hardware, Civil work, fixture and furniture.	20% of the total cost of Package C value to be paid upon successful completion of the task and the acceptance thereof by M/s NADRA
3	SROs of entire Sindh - Supply, installation and commissioning of Hardware, Civil work, fixture and furniture.	50% of the total cost of Package C value to be paid upon successful completion of the task and the acceptance thereof by





S. No.	Milestone	Payment Schedule and condition
		M/s NADRA
4	Maintenance and Support	100% of the cost of Maintenance and Support on the basis of actual value to be paid upon successful completion of the task and the acceptance thereof by BoR Sindh

6.1.4 Network Connectivity

S. No.	Milestone	Payment Schedule and condition
3.	Supply, installation and commissioning of Network Connectivity, Networking Equipment, Bandwidth and SMS package.	70% of Network Connectivity of Package D on the basis of actual cost to be paid upon supply, installation and commissioning of Networking Connectivity and acceptance thereof by M/s NADRA.
2	Maintenance and Support upon completion of 1 st year	10% of Network Connectivity of Package D to be paid upon completion of 1 st year of Supply, installation and commissioning of Network Connectivity.
3	Maintenance and Support upon completion of 2 nd year	10% of Network Connectivity of Package D to be paid upon completion of 1 st year of Supply, installation and commissioning of Network Connectivity.
4	Maintenance and Support upon completion of 3 rd year	10% of Network Connectivity of Package D to be paid upon completion of 1 st year of Supply, installation and commissioning of Network Connectivity

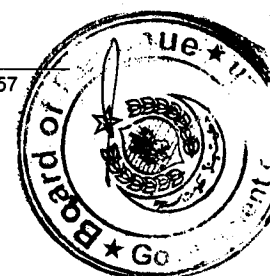
6.2 Project Location

Since the project requires regular interaction with the officers of this Project Management Unit, it is essential that the Successful Bidder set up a project office at Karachi with the required number of resources. It is also required that the successfully bidder/Contractor appoint a Project Leader, with sufficient experience in e-Governance projects to lead the team on-site and provide overall guidance to the team and maintain effective coordination with Board of Revenue Sindh.

6.3 Deliverables of the Assignment

6.3.1 Key Tasks

The contractor will deploy its following team members based in Karachi:





- a) Project Management Professional: 3
- b) Data Centre Infrastructure Specialist: 2
- c) Software Engineers: 15
- d) Database Administrator: 3
- e) Network Administrator: 8
- f) System Administrator: 3
- g) Domain Experts for Stamps & Registration: 3
- h) Civil Work Specialist 2
- i) Interior Designer 1

6.3.2 Mode of Bidding

- o The firm or consortium of the firms (bidder) must be an entity incorporated in Pakistan under the Companies Ordinance 1984.
- o A Bidder must submit an original proposal substantially responsive to the Technical Specifications included in the Bidding Documents.
- o Purchaser reserves the right to accept or reject any bid and to annul the bidding process and reject all bids, at any time prior to acceptance of a bid or proposal, without thereby incurring any liability to the affected Bidder(s), by promptly intimating all bidders and returning the bid security of all bidders and if requested communicating the grounds of cancellation to the requesting bidders without an obligation to justify such grounds.
- o Purchaser reserves the right at the time of award of Contract after design review in consultation with the successful bidder to increase or decrease the scope of services specified in the RFP in accordance with Sindh Public Procurement Rules 2010.

6.3.3 Procurement Schedule

The procurement schedule for this project is as follows:

Procurement Milestone	Date
Release of RFP to Bidders	Thursday 28 th September 2017
Pre-bid Meeting Questions / Dead line for seeking Clarifications (if any) submitted by prospective Bidders	Five Days before Bid Opening at Office of Project Director (Automation of Stamps & Registration), C-73, Block-2, Kehkhasan, Clifton, Karachi





Pre-Bid Meeting date, time and venue	Tuesday 10th October 2017 at 03:00 pm at Office of Project Director (Automation of Stamps & Registration), C-73, Block-2, Kehkhasan, Clifton, Karachi
Proposal Submission Deadline	Friday 13th October 2017 till 03:00 pm at Office of Project Director (Automation of Stamps & Registration), C-73, Block-2, Kehkhasan, Clifton, Karachi
Technical Bid opening date, time and venue	Friday 13th October 2017 till 03:30 pm at Conference Room, C-73, Block-2, Kehkhasan, Clifton, Karachi

Table 4: Procurement Schedule

Note: The Purchaser reserves the right to adjust this schedule as necessary in accordance with SPPR 2010.

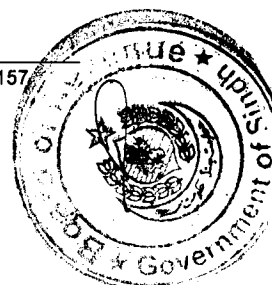
6.4 Cost of Bidding

The Bidder shall bear all costs associated with the preparation and submission of its bid, and the Purchaser will in no case be responsible or liable for those costs.

6.5 The Bidding Documents

The technical offer must be submitted (in duplicate) with the following documents

- Company Profile with complete address, telephone No. Fax. No. and e-mail address and contact person.
- Evidence of Relevant experience.
- Affidavit that the firm is not blacklisted;
- Document Fee and Bid Security of the specified form and amount as per the Tender Document in a sealed envelope.
- Bid must be signed, named and stamped by the authorized person of the firm along with authorization letter
- Authenticated Financial Statements of last three years should also be submitted with Technical Proposals
- Valid NTN, GST, PST, Professional Tax and any other valid Tax Registration Certificate required by law in force.
- In case of joint venture, names, company profiles, NTN, GST, PST Registration Certificates and authorization letter of the JV Partner on Stamp Paper of the prescribed denomination to bid on its behalf duly attested by the authorized Oath Commissioner / Notary Public shall be required.
- Drawings and brochures of the products offered with specification compliance sheet of each.
- Project Plan and Implementation Methodology must be submitted. Bids submitted without a Project Plan and Implementation Methodology shall be rejected.
- Ability to provide after sales support.





- Details of full time staff on company's payroll to be nominated for execution of the project.
- Name of key project personal with their qualification to be dedicated for undertaking the assignments as required

6.5.1 Content of Bidding Documents

- The contents of the Bidding Documents should be read in conjunction with any clarification in RFP.
- Bidders are expected to examine all instructions, forms, terms, specifications, and other information in the RFP. Failure to furnish all information required by the RFP or to submit a bid not substantially responsive in every respect will be at the Bidder's risk and may result in the rejection of its bid. Moreover, the bid should contain a comprehensive solution catering to the project needs in totality. The Purchaser reserves the rights to reject partial solutions.

6.5.2 Pre-bid Meeting for Clarification on RFP

- A prospective Bidder requiring any clarification upon the RFP may notify the Project Director Automation of Stamps & Registration, Board of Revenue Sindh in writing or by facsimile at the Purchaser's address provided in this RFP. Similarly, if a Bidder feels that any important provision in the documents will be unacceptable such an issue should be raised as soon as possible. The Project Director Automation of Stamps & Registration will respond in writing to any request for clarification of the RFP that it receives no later than the deadline prescribed in the procurement schedule at section 3.4.4. All requests for clarification of the RFP must be notified by a prospective Bidder to the Purchaser no later than the deadline for submission prescribed in the procurement schedule at section 3.4.4. Copies of the Project Director Automation of Stamps & Registration response (including an explanation of the query but not identifying its source) will be sent to all prospective Bidders that have received the RFP and will be hosted on the website of the Purchaser i.e. www.borsindh.gov.pk
- A pre-bid meeting will be held as prescribed by the Purchaser in the procurement schedule included in this RFP. The pre-bid meeting will be held at the premises of the Purchaser in Karachi, to answer any queries that potential bidders may have. All queries relating to RFP should be faxed or mailed to Project Director by the deadline specified in the schedule
- As mentioned in above point, the Purchaser will organize and Bidders may attend a pre-bid meeting. The purpose of the meeting will be to clarify issues and answer questions on any matter that may be raised at this stage, with particular attention to issues related to the Technical Requirements. Bidders are requested, as far as possible, to submit any questions in writing or by electronic mail or facsimile, to reach the Project Director not later than the specified date in the schedule at section 3.4.4. Minutes of the meeting, including the questions raised and responses given, together with any responses prepared after the meeting, will be transmitted without delay to all those who attended the pre-bid meeting and will be hosted on the website of





Purchaser for those interested bidders who could not attend the pre-bid meeting.

6.5.3 Clarification if any on RFP

An interested bidder, who has obtained bidding documents, may also make any further request for clarification of contents of the bidding document in writing, and procuring agency will respond to such queries in writing within three calendar days, provided they are received at least five calendar days prior to the date of opening of bid;

Any clarification in response to a query by any bidder will be communicated to all parties who have obtained the bidding document or participated in pre-bid meeting and will also be uploaded on procuring agency's website.

6.6 Preparation of Bids

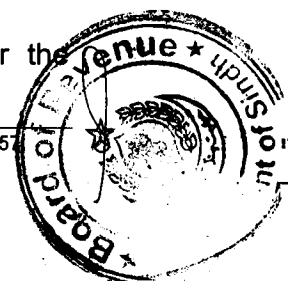
6.6.1 Language of Bid

The bids prepared by the Bidder, and all correspondence and documents related to the bid, shall be written in the English language.

6.6.2 Documents Comprising the Bid

The bid submitted by the Bidder shall comprise the following:

- Relevant documents / Proofs supporting qualification of bidder in Eligibility Criteria with respect to requirements mentioned in section 3.4.5;
- Relevant documents / Proofs supporting qualification of bidder in Eligibility Criteria with respect to requirements mentioned in section, such as year of incorporation, list of partners/directors, statement of experience, key personnel, details of relevant successful projects and their completion certificates, team CVs, technical write-ups &etc. to be supplied as per evaluation criteria mentioned in prescribed forms;
- Response to the technical requirements as described in the RFP;
- A Bid Form duly completed and signed by a person or persons duly authorized to bind the Bidder to the Contract;
- All Price Schedules duly completed in accordance with this RFP and signed by a person or persons duly authorized to bind the Bidder to the Contract;
- Bid security/Bid Security in the form of a Bank Guarantee or Bank Draft/Pay Order should be submitted;
- A duly notarized, written power of attorney authorizing lead bidder to bid on behalf of consortium partners, if applicable;
- A list of all deviations and justifications for the deviation to the required technical features specified in the Technical Requirements;
- An undertaking that the Bidder, or in case of a consortium, any of the partners or has not been blacklisted or declared bankrupt by any government or financial institution as per the specimen supplied as 9.1.1.
- A duly notarized Integrity Pact on Rs. 100/- stamp paper – as per the specimen supplied;





6.6.3 Bid Prices

- Prices must be quoted, strictly using the format mentioned in Schedule of Requirements of this RFP. Bidders may be required to provide a breakdown of any composite or lump-sum items included in the Price Schedules.
- These prices must include all incidental costs associated with the provision of the service, such as travel, subsistence, office support, communications, printing of materials, etc., and all taxes, levies, duties and fees imposed on the Bidder, its Sub-Consultants, or employees on account of such services in the Purchaser's country or in any other country.
- Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and shall not be subject to increases on any account. Bids submitted that are subject to price adjustment will be rejected.
- Bid Price shall include stamp duty charges @ 0.35% of the total value of Contract.

6.6.4 Bid Currencies

All prices shall be quoted in Pakistan Rupees inclusive of all taxes, duties and government levies.

6.6.5 Documents Establishing the Conformity of Proposed Solution to Bidding Documents

- Bidders are reminded that their bids may be considered as non-responsive if material deviations are taken. Conformity check list has to be provided with documents establishing conformity to the proposed solution.
- The Bidder shall furnish, as part of its bid, documents establishing the conformity to the Bidding Documents of the proposed solution that the Bidder proposes to implement under the Contract.
- The documentary evidence of conformity of the proposed solution to the Bidding Documents shall be in the form of written descriptions, literature, certifications, and client references, including:
- An Implementation Plan for the implementation of execution services as required by the Purchaser and stated in the RFP. The Implementation Plan must be at a level of details to demonstrate the understanding of the Bidder with respect to the scope of implementation services of the project.

Bids submitted without a Project Plan and Implementation Methodology shall be rejected.

6.6.6 Bid Validity and Security

A bid security will be required. The amount of bid security required is two per cent (2%) of the Total Bid Price. In case of a Bidder submitting an original bid and an alternative bid, the bid security will be two per cent (2%) of the Total Bid Price of the higher bid. This bid security is to be submitted in the form of





Bank Guarantee or Demand Draft or Pay Order in favour of Purchaser. The Bid security shall be in Pak Rupees & from a scheduled bank in Pakistan.

- The bid validity period shall be 90 days after the deadline for bid submission.
- In exceptional circumstances, Purchaser may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing (or by fax). The bid security provided shall also be suitably extended. A Bidder granting the request will not be required nor permitted to modify its bid.
- Bid security must be valid for 28 days beyond the validity of the bid. Accordingly, a bid with a bid security that expires prior to 28 days beyond the validity of the bid shall be rejected as non-responsive.
- Un-successful Bidder's bid security will be discharged/returned as promptly as possible but not later than thirty (30) days after the expiration of the period of bid security validity prescribed by the Purchaser.
- The successful Bidder will be required to keep his bid security valid till the agreement is signed with the Purchaser for the execution of the project.

6.6.7 Format and Signing of Bid

- Separate technical and financial bids shall be submitted.
- The Bidder shall prepare one original and one copy of the bid, clearly marking each one as "TECHNICAL BID - ORIGINAL", "FINANCIAL BID - ORIGINAL", "TECHNICAL BID - COPY", "FINANCIAL BID - COPY," etc., as appropriate. In the event of any discrepancy between them, the original shall govern.
- The original and copy of the bid shall be typed or written in indelible ink and shall be signed and stamped by the Bidder or a person or persons duly authorized to bind the Bidder to the Contract. The person or persons signing the bid shall initial all pages of the bid, except for un-amended printed literature.
- The bid shall contain no interlineations, erasures, or overwriting, except to correct errors made by the Bidder, in which case such corrections shall be initialled by the person or persons signing the bid.

6.7 Submission of Bids

6.7.1 Sealing and Marking of Bids

- The Bidder shall seal the original and copy of the bid in separate envelopes, duly marking the envelopes as "TECHNICAL BID - ORIGINAL" and "TECHNICAL BID - COPY" etc. Similarly the original and copy of the financial bids shall be enclosed in separate envelopes and duly marked. The





envelopes shall then be sealed separately in outer envelopes clearly marked "TECHNICAL BID" and "FINANCAIL BID".

- The inner and outer envelopes shall be addressed to the Purchaser at the address given in the RFP, bearing the Contract/Project name and the statement DO NOT OPEN BEFORE the specified proposal opening date & time.
- The inner envelopes shall also indicate the name and address of the Bidder so that the bid can be returned unopened in case it is declared "late."
- The Technical proposal should not contain any financial data or information as this may be construed as an attempt to influence the technical evaluation process and the bid would be rejected.
- The Bid Security should be submitted with the Financial Proposal. A certificate certifying that appropriate Bid Security has been submitted with the Financial Proposal should be included with the Technical Proposal without mentioning the value of the Bid Security.
- In case document fee is not paid a Pay Order for the document fee shall be submitted with the technical proposal. If however, fee is already paid against the purchase of document a copy of the evidence of payment of fee must be submitted with the technical proposal.

6.7.2 Deadline for Submission of Bids

- Bids must be received by the Purchaser at the address specified in the RFP no later than the specified proposal submission date & time prescribed in the procurement schedule at section 3.4.4.
- The Purchaser may, at its discretion, extend this deadline for submission of bids in accordance with SPPR 2010, in which case all rights and obligations of the Purchaser and Bidders will thereafter be subject to the deadline as extended.
- The TECHNICAL and FINANCIAL bids, separately sealed shall be addressed and delivered to the Purchaser.

6.7.3 Late Bids

Any bid received by the Purchaser after the bid submission deadline prescribed by the Purchaser in the procurement schedule at section 3.4.4; will be rejected and returned unopened to the Bidder.

6.7.4 Modification and Withdrawal of Bids

- Modifications to the bid will not be accepted.





- The Bidder may withdraw its bid after submission, provided that written notice of the withdrawal is received by the Purchaser prior to the deadline prescribed for bid submission.
- A Bidder wishing to withdraw its bid shall notify the Purchaser in writing prior to the deadline prescribed for bid submission. A withdrawal notice may also be sent by electronic mail or facsimile, but it must be followed by a signed confirmation copy, postmarked no later than the deadline for submission of bids. The notice of withdrawal shall be addressed to the Purchaser at the address stated for bid submission. Bid withdrawal notices received after the bid submission deadline will be ignored, and the submitted bid will be deemed to be a validly submitted bid.
- No bid may be withdrawn in the interval between the bid submission deadline and the expiration of the bid validity period. Withdrawal of a bid during this interval may result in the forfeiture of the Bidder's bid security.

6.8 Bid Opening and Evaluation

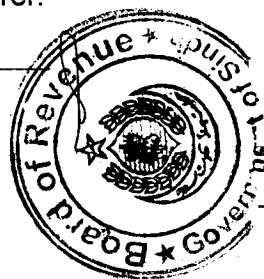
6.8.1 Opening of Technical Bids by Purchaser

- The Purchaser will open all technical bids of Bidders who have submitted a bid, in public, in the presence of Bidder's representatives who chose to attend, on the date and at the place prescribed in the procurement schedule at section 3.4.4 Bidder's representatives shall sign a register as proof of their attendance.
- Bids shall be opened one at a time, reading out: the name of Bidder and any other such details as the Purchaser may consider appropriate.
- Bids that are received late shall not be accepted and opened, irrespective of the circumstances.

6.8.2 Eligibility Criteria for Bidders

The Bidders must comply with the following mandatory requirements:

- The Bidder must be registered under the Companies Ordinance 1984;
- The Bidders must be registered with Federal Board of Revenue (FBR) for Income Tax and Sales Tax and must be on SRB's Active Taxpayers List.
- The Bidders must be registered with Sindh Revenue Board (SRB) for Provincial Sales Tax and must be on SRB's Active Taxpayers List.
- The Bidders or any partner in consortium must be registered with Pakistan Engineering Council (PEC) in category C3 or above.
- The Bidders must be able to demonstrate that they have expertise in performing the tasks enlisted under scope of work.
- Bidders may submit bids as a Joint Venture but in such case one bidder shall be appointed as a lead bidder who shall be solely responsible for end to end delivery of the entire project.
- Bidders or any of its consortium partners must not have been black listed or declared bankrupt by any Government or Financial institution. be partner of principal / original equipment manufacturer of IT equipment and allied peripherals.
- Bidder must submit authorization letter from Original Equipment Manufacturer.





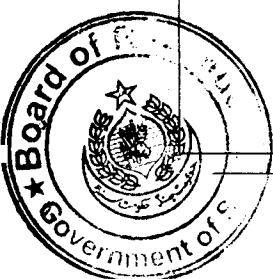
- Bidders NOT complying with any of the above eligibility pre-requisites would be disqualified. All documentary evidence must be submitted along with the bids; no document will be acceptable after bid.
- The Bidder must submit Drawings and Brochures of the products offered meeting the specification of the items listed in the BoQ.

Bidders NOT complying with any of the above eligibility pre-requisites would be disqualified. All documentary evidence must be submitted along with the bids; no document will be acceptable after bid submission.

6.8.3 Evaluation of Technical Bids by Purchaser

The financial bid of only those bidders will be opened who meet the mandatory requirements and qualify the following evaluation criteria against the tender. The financial bid of disqualified/non-compliant bidders will be returned unopened.

S.No.	Criteria	Max Marks	Marks obtained
A	COMPANY PROFILE	200	
1	The firm must be registered for at least 10 Years in relevant Business. (Attach Certificate of Incorporation / Company Registration Document)	100	
2	The firm must have at least 30 IT Hardware & Networking and 30 Software Employees/Staff on company's permanent payroll in relevant category for last One (01) year. No marks for less than 60 IT Employees/Staff (Attach Authenticated Company's Payroll, CV and Degrees of Employees)	100	
B	SPECIFIC& GENERAL EXPERIENCE	400	
1	The firm or consortium partners having successfully completed at least 3 projects having worth Rs. 30 Million or above of development and deployment of customized software involving Business Process and Financial Management for Government/Semi-Government or any reputed private institutions. at least 3 project = 100 marks any project more than 3 will have 10 point upto the maximum of 50. [3 project = 100, 4 project = 110, 5 project = 120, 6 project = 130, 7 project = 140, 8 project = 150] No marks for less than 3 projects.	150	





S.No.	Criteria	Max. Marks	Marks obtained
	(Attach Successful Completion Certificates)		
2	<p>The firm or consortium partners having successfully completed at least 3 projects involving e-payment solutions for Government/Semi-Government or any reputed private institutions.</p> <p>at least 3 project = 70 marks any project more than 3 will have 10 point upto the maximum of 30.</p> <p>[3 project = 70, 4 project = 80, 5 project = 90, 6 project = 100]</p> <p>No marks for less than 3 projects.</p> <p>(Attach Successful Completion Certificates)</p>	100	
3	<p>The firm or consortium partners having successfully completed at least 3 projects of worth Rs. 100 million or above of supply installation and commissioning of IT hardware with support and maintenance for Government/Semi-Government or any reputed private institutions.</p> <p>at least 3 project = 50 marks</p> <p>No marks for less than 3 projects.</p> <p>(Attach Successful Completion Certificates)</p>	50	
4	<p>The firm or consortium partners having successfully completed at least 3 projects of supply installation and commissioning of WAN connectivity with support and maintenance for Government/Semi-Government or any reputed private institutions.</p> <p>at least 3 project = 50 marks</p> <p>No marks for less than 3 projects.</p> <p>(Attach Successful Completion Certificates)</p>	50	
5	<p>The firm or consortium partners having successfully completed at least 3 projects of worth Rs. 200 million or above of construction of buildings at 3 diverse locations</p> <p>at least 3 project = 50 marks</p> <p>No marks for less than 3 projects.</p>	50	





S.No.	Criteria	Max Marks	Marks obtained
	(Attach Successful Completion Certificate)		
C	QUALITY	200	
1	ISO 9001:2008 Certified or equivalent credentials (Attach Valid Certificate)	50	
2	ISO 27001 Certification (Attach Valid Certificate)	25	
3	CMMI Certification (Attach Valid Certificate)	25	
3	Technical/Management credentials: <ol style="list-style-type: none"> 3 x Project Management Professional (PMP) = 15 Marks(5 marks for each) 5 x Network Engineer (CCNA & CCNP) = 10 Marks (2 Marks for each) 10 x System Engineer (MCSE & MCP) = 10 Marks (1 mark for each) 5 x Hardware Engineer (A+ or Equivalent) = 5 Marks (1 marks for each) 5 x Software Engineer (MCSD) = 15 Marks (3 marks for each) 3 x MS SQL Server Certified = 15 Marks (3 marks for each) 3 x Certified Data Center (CDCP or CDCMP) = 15 Marks (3 marks for each) 3 x Civil Engineers (Professional Engineer Certified) =15 Marks(5 marks for each) (Attach Authenticated Company's Payroll, CV and Valid Certificates of Employees)	100	
D	FINANCIAL CAPABILITY	200	
1	Average turnover in relevant Business during last 3 Years: <ol style="list-style-type: none"> Rs. 400 Million but less than Rs. 600 Million = 100 Marks Rs. 600 Million or above = 200 Marks No marks will be given below Average Turnover of Rs. 200 Million during the specified period. (Attach Audited Financial Statements)		
Total:		1000	
Passing Marks:		800	

Table 1: Technical Evaluation Criteria



Note:

Successful Completion Certificates and CVs should be attached as the proof of claims against evaluation criteria.

6.3.4 Opening of Financial Bids by Purchaser

- The Purchaser will open all financial bids of bidders who have qualified the eligibility criteria and scored at least 80% in technical evaluation, in public, in the presence of qualified bidders' representatives who choose to attend, at the time, on the date and at the place, it will be communicated to qualified bidders well in time. Bidders' representatives shall sign a register as proof of their attendance.
- Financial Bids shall be opened one at a time, reading out: the name of the Bidder; the bid price; the presence or absence of a bid security; the presence or absence of requisite powers of attorney; and any other such details as the Purchaser may consider appropriate.
- Financial Bids of Bidders who have not scored the requisite 80% in technical evaluation would not be opened and shall not be considered for further evaluation, irrespective of the circumstances.

6.3.5 Clarification of Bids

During the bid evaluation, the Purchaser may, at its discretion, ask the Bidder for a clarification of its bid. The request for clarification and the response shall be in writing, and no change in the price or substance of the bid shall be sought, offered, or permitted.

6.3.6 Preliminary Examination of Financial Bids

- The Purchaser will examine the bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the bids are generally in order.
- Arithmetical errors shall be subject to rectification by the Purchaser. If a Bidder does not accept the correction of errors, its bid will be rejected and its bid security may be forfeited.
- The Purchaser may waive any minor informality, nonconformity, or irregularity in a bid that does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any Bidder.
- Prior to the detailed evaluation, the Purchaser will determine whether each bid is of acceptable quality, is complete, and is substantially responsive. For purposes of this determination, a substantially responsive bid is one that conforms to all the terms, conditions, and specifications without material





deviations, exceptions, objections, conditions, or reservations. A material deviation, exception, objection, conditionality, or reservation is one:

- that limits in any substantial way the scope, quality, or performance of the proposed solution; or
 - that limits, in any substantial way that is inconsistent with the RFP, the Purchaser's rights or the successful Bidder's obligations under the Contract; and
 - that the acceptance of which would unfairly affect the competitive position of other Bidders who have submitted substantially responsive bids.
- If a bid is not substantially responsive, it will be rejected by the Purchaser and may not subsequently be made responsive by the Bidder by correction of the nonconformity. The Purchaser's determination of bid responsiveness will be based on the contents of the bid itself and any written clarifications submitted by the Bidder.

6.8.7 Compliance Sheet

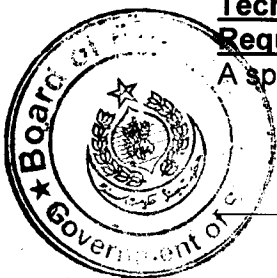
The bidder has to certify that the proposal submitted is completely complaint on following parameters:

Sr. No	Tender Requirement	Compliance	Non-Compliance
1.	Bid submitted in prescribed format w required technical documents		
2.	Bid for complete package		
3.	Items specification compliance		
4.	Delivery schedule compliance		
5.	Support & Maintenance compliance		
6.	Technical skills compliance		

6.8.8 Financial Bids

Bidders need to furnish the Financial Bids catering to all the requirements of the system. **The following tables are samples only, if the quantities and items mentioned in the tables below differ from the ones mentioned in section 4: Technical Requirements of the RFP, the information in section 4: Technical Requirements will prevail.**

A specimen is provided below:





6.8.8.1 Software Design, Development and Deployment

S. No.	Description of Assignment	Unit	Cost (in PKR inclusive of taxes)
1	Software Development, Testing , Deployment and rollout	1 job	
2	Software Training	1 job	
3	Software Support and Maintenance for 1 year	1 job	
	Total Cost		

6.8.8.2 Central Site & Disaster Recovery Site H/w Requirement

Sr. #	Description	Quantity	Unit Price	Total Cost (in PKR inclusive of taxes)
1	Storage (40TB useable)	02		
2	Blade chassis with 07 blades	01		
3	Rack mounted Server	03		
4	Tape Library	01		
5	Backup Software (capacity based Licensed)	01		
6	Hypervisor with virtual machine management	10 Sockets		
7	Antivirus with 500 clients	01		
8	SSL certificate	01		
9	OS licenses	05		
10	DB Licenses with RAC and data guard	06 cores		
11	Application Load Balancer	02		
12	Windows Server License	20 VCPU		
13	Windows CAL Licenses	500		
14	Hardware Support and Maintenance for 1 year	01 job		
15	Mobile kits	15		
16	SSL VPN Concentrator Solution	1		

6.8.8.3 Site Hardware, Electrical Equipment and Civil Work

Sr. #	Item	Quantity	Unit Price	Total Cost (in PKR inclusive of taxes)
1	Desktop Computer	338		
2	Finger Print Reader	92		



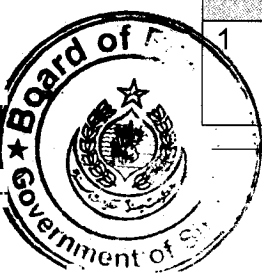


Sr #	Item	Quantity	Unit Price	Total Cost (in PKR inclusive of taxes)
3	Digital Camera	96		
4	Token Printer	90		
5	Digital Scanner	126		
6	Laser Jet Printers	100		
7	Bar Code Readers	93		
8	UPS	99		
9	5 KVA Generators	5		
10	3 KVA Generators	94		
11	CCTV system	89 sites		
12	Fire Proof Almirah	112		
13	Fire Extinguisher	134		
14	Office Chairs	311		
15	Office Tables / Computer Tables	312		
16	Visitor Chair	700		
17	Floor Tiles	66,200 sqft		
18	False Ceiling	66200 sqft		
19	Partition	89		
20	Painting Work	66,200 sqft		
21	Window Coverings	89		
22	Wiring / Cabling	66,200		
23	Distribution Board	89		
24	Ceiling Fans	197		
25	LED Lighting Fixtures	66,200 sqft		
26	Split AC	99		
27	Support and Maintenance for 1 year	1 job		

Rates for all procurement activities for civil & infrastructure works should be quoted on an individual basis for each unit. It is also to be noted that the area estimates for civil work are on projected basis and the successful bidder will have to assess accurate areas for all sites, before initiating the civil work and renovation activity. The payment for civil & infrastructure works will be released on the actual pricing of work and materials basis.

6.8.8.4 Network Connectivity

Sr. #	Description	Quantity	Unit Price	Total Cost (in PKR inclusive of taxes)
1	Fully redundant (1:1) IPsec VPN solution at Central Site (HQ BOR SINDH))	3 (2 x redundant at central site) (1 x DR site)		





Sr. #	Description	Quantity	Unit Price	Total Cost (in PKR inclusive of taxes)
2	Compliance, Monitoring, Logging & Management Segment	1		
3	Network Link Monitoring	1		
4	Remote Site Firewall device	99		
5	Primary DSL / Fiber Links (remote sites and NADRA to central site)	101 (99 X REMOTE SITES TO CENTRAL) (1 X NADRA TO CENTRAL) (1 X CENTRAL TO DR)		
6	Backup Wireless Links (remote sites and NADRA to central site)	101 (99 X REMOTE SITES TO CENTRAL) (1 X NADRA TO CENTRAL) (1 X CENTRAL TO DR)		
7	Redundant Backhaul Link	2 (CENTRAL AND DR SITE)		
8	Broadcast SMS for 3 years	1,080,000 SMS/year		
9.	Support and Maintenance for 3 years	1 job		
10	USB dongles with 3G/4G/EVDO connectivity	15 dongles		

6.8.8.5 Total Financial Proposal Cost

Sr. #	Description	Cost (in PKR inclusive of taxes)
1	Cost of Software Package	
2	Cost of Central site and DR Site H/w	
3	Cost of site hardware	
4	Cost of Network Solution	
	Grand Total Cost	





6.8.9 Evaluation and Comparison of Financial Bids

6.8.9.1 Technical Evaluation Scores

Only bidders who shall have attained a score of 80 % and above in the detailed technical evaluation will proceed to the next stage of financial evaluation.

6.8.9.2 Preliminary Evaluation Checklist

Bidders are required to furnish relevant information required in the evaluation criteria in the prescribed Technical Evaluation Forms provided in the document

6.8.9.3 Information Required

6.8.9.3.1 General

- 1 Name of Bidder consortium going into bid.
- 2 Number of Years in business in Pakistan
- 3 Number of Offices locations in Pakistan
- 4 Annual Turnover (Million Rs.)
- 5 Value of projects in hand (details may be given)
- 6 Year of Incorporation
- 7 Status of the Bidder
 - Sole Proprietor
 - Partnership Firm
 - Private Limited Company
 - Public Limited Company
 - Entity registered / incorporated outside Pakistan (Give details)
 - Other (Please specify)
- 8 Names of Owner / Partners / Chief Executive / Directors
- 9 Details of Registered Head Office (Address, Phone, Facsimile, Email and Website information)

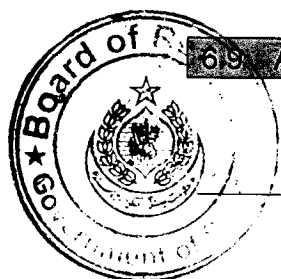
6.8.9.3.2 Details of total staff employed

- 1 Number of permanent staff employed: Technical /Managerial
- 2 Cumulative Experience (in years)
- 3 Details of Staff assigned for this project in the proposal.

6.8.10 Contacting the Purchaser

- From the time of bid opening to the time of Contract award, if any Bidder wishes to contact the Purchaser on any matter related to the bid, it should do so in writing to the Point of Contact mentioned in clause 1.9
- If a Bidder tries to directly influence the Purchaser or interfere in the bid evaluation process or influence the Contract Award Decision, its bid will be rejected and the Bidder may be blacklisted and barred for participating in future Government of Sindh tenders.

6.9 Award Criteria





- The Purchaser will evaluate and award the Contract to the Bidder whose bid has been determined to be substantially responsive and the Best Evaluated Bid.

6.9.1 Purchaser's Right to accept any bid and to reject any or all bids

- The Purchaser reserves the right to accept or reject any bid or to annul the bidding process and reject all bids at any time prior to Contract award, without thereby incurring any liability to the Bidders in accordance with Sindh Public Procurement Rules 2010.

6.9.2 Notification of Award

- Prior to the expiration of the period of bid validity, the Purchaser will notify the successful Bidder in writing by registered letter that its bid has been accepted.
- The notification of award will constitute the formation of the Contract.
- Upon the successful Bidder's furnishing of the signed Contract Form and a performance security, the Purchaser will promptly notify each unsuccessful Bidder and will discharge its bid security.

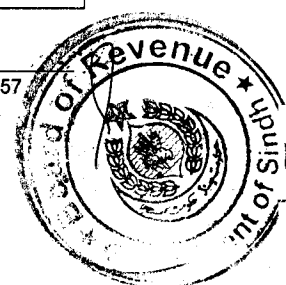
6.9.3 Signing of Contract

- At the same time as the Purchaser notifies the successful Bidder that its bid has been accepted, the Purchaser will send the Bidder the Contract Form, incorporating all agreements between the parties.
- As soon as practically possible, but no more than fifteen (15) calendar days following receipt of the Contract Form, the successful Bidder shall sign and date the Contract Form and return it to the Purchaser.
- The Purchaser and successful Bidder may also agree to meet to finalize the Contract Agreement.

6.9.4 Performance Security

- Within fifteen (15) calendar days of the receipt of notification of award from the Purchaser, the successful Bidder shall furnish a performance security in the amount of five per cent (5%) of total contract price in the form of Pay Order or Demand Draft or Bank Guarantee in favour of the Purchaser as per format of the Performance Security Form. Insurance Guarantee or Personal/Company Cheques would NOT be acceptable.
- The Bank Guarantee for performance security shall be issued by a scheduled bank in Pakistan acceptable to the Purchaser.
- Failure of the successful bidder to comply with the requirement shall constitute sufficient grounds for the annulment of the award of contract to the successful Bidder and forfeiture of the Bid Security.

7 Conditions of Contract





These General conditions shall apply in all Contracts made by Purchaser for the procurement of services.

7.1 Applicable Laws

The Contract shall be interpreted in accordance with the laws of Pakistan. The Consultant shall respect the provisions contained in applicable statutory notifications.

7.2 Taxes and Duties

The Consultant or his agent shall be entirely responsible for all taxes and levies including Income Tax, General Sales Tax (GST), Provincial Sales Tax (PST), Stamp Duty, Withholding Tax, Custom Duties, license fees, etc. incurred or accrued until the final delivery of the services.

7.3 Stamp Duty

The Consultant would be responsible for paying the Stamp Duty in the amount of 0.35% of the Total Value of the Contract at the time of signing the Contract.

7.4 Contract Language

The Contract shall be written in the English language. All literature, correspondence and other documents pertaining to the Contract, which are exchanged by the parties, shall be written in the same language.

7.5 Notices

Any notice given by one party to the other pursuant to this Contract shall be sent in writing or by fax and confirmed in writing to the address specified for the purpose in the conditions of Contract.

A notice shall be effective when delivered or on the notice's effective date, whichever is later.

7.6 Correspondence

The Consultant shall not indulge into correspondence with unconcerned offices and organizations within or outside Purchaser's office prior to the award of the Contract or later. The authorized address in this connection is stated in clause 1.9.

7.7 Patent Rights

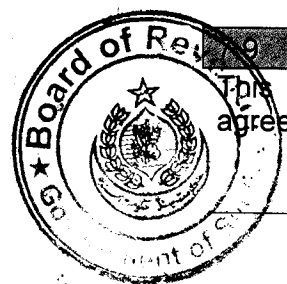
The Consultant indemnify Purchaser against all third-party claims of infringement of patent, trade mark industrial design rights arising from use of the goods or any part thereof in Pakistan.

7.8 Officials not to Benefit

No official or employee of Purchaser shall be admitted to any share or part of this Contract or to any benefit that may arise there from. The Contract shall be liable for cancellation during any time of execution if such default is reported, detected and noticed.

7.9 Modifications/Amendment to Contract

This contract may be modified/ amended to include fresh clause(s) to the mutual agreement by the Consultant and the Purchaser subject to provision of RFP and





SPPRA Rules. Such modification shall form an integral part of the Contract in accordance with SPP Rules 2010 as amended till date.

7.10 Standards

The services provided under this Contract shall conform to the standards mentioned in the Technical Specifications given in the RFP, and when no applicable standards is mentioned, to the authoritative standard appropriate to the international industry standards and such standards shall be the latest issued by the concerned institution. In case of conflicting specifications appearing in the documents, decision of Purchaser will be final and will hold good.

7.11 Confidentiality of Information

The Consultant shall not, without Purchaser's prior written consent, disclose the Contract, or any provision thereof, or any specifications, plan, drawing, pattern, sample or information furnished by or on behalf of Purchaser in connection therewith, to any person other than a person employed by the Consultant in the performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far, as may be necessary for purposes of such performance.

The Consultant shall not, without Purchaser' prior written consent, make use of any documents or information except for purposes of performing the Contract.

Any documents other than the Contract itself, shall remain the property of Purchaser and shall be returned (in copies) to Purchaser on completion of the Consultant's performance under the Contract if so required by Purchaser.

7.12 Quality

The services provided under the Contract must be of the highest quality and free from any defects, which remains the responsibility of vendor/supplier.

7.13 Assignment

The Consultant shall NOT assign, in whole or in part, its obligations to perform under this Contract, except with Purchaser's prior written consent.

7.14 Change of Order

Purchaser may at any time, by a written order given to the Consultant with mutual consent, make change within the general scope of the Contract in the following:-

- Addition or Deletion or Change in Scope of Work within provision of SPPRA Rules 2010.

If any such change causes an increase or decrease in the cost of, or the time required for the Consultant's performance of any part of the work under the Contract, whether changed or not changed by the order, an equitable adjustment shall be made in the Contract price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the Consultant for adjustment under this paragraph must be asserted within fifteen days from the date of Consultant's receipt of Purchaser's changed order.





7.15 Execution of Contract

Execution of the Contract shall be made by the Consultant in accordance with the terms specified by Purchaser in its schedule of requirements and the conditions of Contract, and the items provided by the purchaser and data shall remain at the risk of the Consultant until the system is commissioned into the service.

8 Terms and Conditions

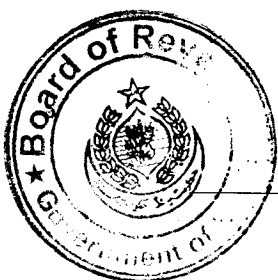
- The Advance Payment Guarantee shall be valid till the expiry of the Contract and would be released upon complete adjustment.
- The Advance Payment Guarantee should be equal to 20% of the Contract Value and should be issued by a Scheduled Bank in Pakistan.
- The Advance Payment Guarantee may be reduced proportionately subject to verification of invoice. The Advance Payment Guarantee shall become null and void and shall be surrendered by Purchaser to the Consultant upon issuance of Acceptance Certificate.
- The payments shall be processed upon presentation of the following documents by the Bidder/Consultant:
 - Commercial invoice issued by the Bidder/Consultant
 - Verification of actual work done as per standards and certification of technical committee
- Payments shall be made promptly by Purchaser within thirty (30) days of submission of an invoice/claim by the Consultant supported with necessary documents subject to release of funds from Finance Department.
- All payment will be made in Pakistan Rupees.
- The type, method and conditions of payment to be made to the Consultant under his Contract shall be specific in the Contract. The Consultant's request's for payment shall be made to Purchaser in writing, accompanied by an invoice describing, as appropriate, the goods delivered and services performed, duly verified by the Project Director/ Purchaser or his designated representative(s) and fulfilment of other obligations stipulated in the Contract. Purchaser shall pay the invoice after fulfilment of prescribed obligations and verifications.
- The total amount to be paid to the successful Consultant shall be the Contract price adjusted to give effect to such additions there to and deductions there from as are provided under the conditions of Contract.

8.1 Ownership

- The ownership of all products and services rendered under any Contract arising as a result of this RFP will be the property of the Purchaser.

8.2 Governing Law

- This RFP and any Contract executed pursuant to this RFP shall be governed by and construed in accordance with the laws of Pakistan. The Government of Pakistan and all Bidders responding to this RFP and parties to any Contract executed pursuant to this RFP shall submit to the exclusive jurisdiction of the Pakistani Courts.





8.3 Contractor's Negligence

- The Contractor shall indemnify Purchaser in respect of all injury or damage to any person or to any property and against all actions, suits, claims, demands, charges and expenses arising in connection herewith which shall be occasioned by the negligence or breach of statutory duty of the Consultant, before whole of the project has been finally accepted.

8.4 Delays in Performance

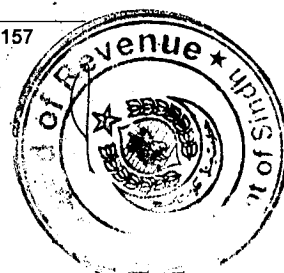
- Delivery of the services shall be made by the Consultant in accordance with the time schedule specified in the Contract.
- Delay by the Consultant in performance of its delivery/project completion obligations shall render the Consultant liable to any or all of the penalties including but not limited to liquidated damages, the Consultant shall promptly notify Purchaser in writing of the fact of the delay, its likely duration and its causes(s). As soon as practicable after receipt of the Consultant's notice, Purchaser shall evaluate the situation and may at its discretion extend the Consultant's time for performance in which case the extension shall be ratified by the parties accordingly.

8.5 Contractor's Default

- If the Contractor neglects to perform the Contract with due diligence and expedition or refuses/or neglects to comply with any reasonable orders given to him in writing by Purchaser or any of his authorized representative in connection with the performance of the Contract or shall contravene the provision of the Contract, Purchaser may give notice in writing to the Contractor to make good the failure, neglect or contravention complained of.
- Should the Contractor fail to comply with the said notice, with a reasonable time from the date of service thereof, it shall be lawful for Purchaser by notice in writing to the Consultant.
- If the Contractor fails to complete any of his obligations within the time granted by Purchaser under "FORCE MAJEURE" and Purchaser shall have suffered any loss from such failure, Purchaser may be entitled to deduct from the Contract price at the rate of (0.5%) of that portion of functionality which cannot in consequence of the said failure be put to the use intended for such work for each week between the time fixed in the Agreement (except as aforesaid) and the actual date of completion, subject to a maximum deduction of 10% of the value of the Contract.

8.6 Documentation

- The Contractor shall submit all necessary manuals, installation, technical, troubleshooting manuals, CDs etc. and keep on updating the Purchaser for all related technical updates.
- The Contractor shall submit all software CDs/download links, License Keys and Activation Codes for all components to the Purchaser. Please NOTE that all Licenses and Activation codes should be issued by the vendor in the name of Government of Sindh.





8.7 Termination of Contract

8.7.1 Termination of Contract for Default

Purchaser may, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Consultant terminate this Contract in whole or in part;

- If the Consultant fails to deliver any or all of the services within the time period's specified in the Contract or any extension thereof granted by Purchaser;
- If the Consultant fails to perform any other obligation under the Contract; or
- If there is evidence that the Consultant has supplied services evading Sales Tax, due Customs Duties and any other levies; or
- If the Consultant, in either of the above circumstances, does not cure its failure with in a period of 60 days (or such long period as Purchaser may authorize in writing) after receipt of the default notice from Purchaser.

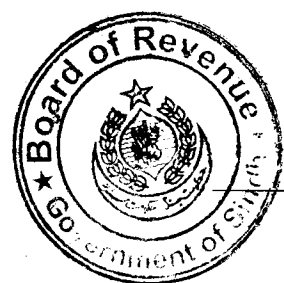
In the event Purchaser terminates the Contract in whole or in part, Purchaser may procure, upon such terms and in such manner as it deems appropriate, services similar to those un-delivered and the Consultant shall be liable to Purchaser for any excess costs for such similar goods and services. However, the Consultant shall continue performance of the Contract to the extent not terminated.

8.7.2 Termination for Insolvency

- Without prejudice or affecting of any right action or remedy which has accrued or will accrue there-after to Purchaser, Purchaser may at any time terminate the Contract by giving written notice to the Consultant, without compensation to the Consultant if the Consultant becomes bankrupt or otherwise insolvent.

8.8 Liquidated Damages

- If Consultant fails to deliver any or all of the goods or perform the services within the time period (s) specified in the Contract, Purchaser shall without prejudice to its other remedies under the Contract, shall have the right to claim liquidated damages and Consultant shall pay to Purchaser as liquidated damages with respect to those delayed goods an amount equal to 0.5% of the value of the services delayed for each week of delay or part thereof until actual delivery or performance up to a maximum deduction of 10% of the Contract price. Once the maximum is reached, Purchaser may consider Termination of Contract keeping in view the legal rights of the Consultant under the Law of Pakistan.
- The value of all goods or part supply of goods and services made which are incomplete and therefore not utilized by Purchaser in its operations shall also be added for the purpose of liquidated damages. Any liquidated damages if not paid in cash by Consultant shall be deducted from the invoice (s) submitted by Consultant. The imposition of liquidated damages upon the Consultant and its payment shall not absolve the Consultant/supplier from its





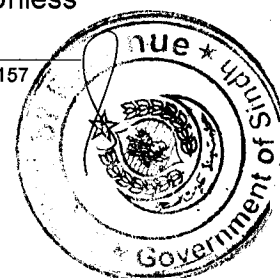
obligations to deliver or from any other liabilities or obligations under the Contract.

8.9 Amicable Settlement

- Purchaser and the Consultant shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with Contract.
- The Contract will be construed under and governed by THE LAWS OF THE ISLAMIC REPUBLIC OF PAKISTAN.
- Except as otherwise provided in the Contract, any difference, dispute or question arising out of or with reference to the Contract which cannot be settled amicably shall within (30) thirty days from the date of either party informs the other in writing that such difference, dispute or question exists be referred to arbitration.
- The arbitration shall be conducted in accordance with the rules of procedure set forth in the Pakistan Arbitration Act 1940 subsequently amended.
- The arbitration of the majority of the arbitrators shall be final and binding on both parties.

8.10 Force Majeure

- If either party is temporarily rendered unable, wholly or in part by Force Majeure to perform its duties or accept performance by the other party under the Contract it is agreed that on such party, giving notice with full particulars in writing of such Force Majeure to the other party within 14 (fourteen) days after the occurrence of the cause relied on, then the duties, of such party as far as they are affected by such Force Majeure shall be suspended during the continuance of any inability so caused but for no longer period and such cause shall as far as possible be removed with all reasonable speed. Neither party shall be responsible for delay caused by Force Majeure. The terms "Force Majeure" as used herein shall mean Acts of God, strikes, lockouts or other industrial disturbance, act of public enemy, war, blockages, insurrections, riots, epidemics, landslides, earthquakes, fires, storms, lightning, flood, washouts, civil disturbances, explosion, Governmental Export/Import Restrictions (to be supported by a letter from the relevant Authority and verified by the Diplomatic Mission in Pakistan), Government actions/restrictions due to economic and financial hardships, change of priorities and any other causes similar to the kind herein enumerated or of equivalent effect, not within the control of either party and which by the exercise of due care and diligence either party is unable to overcome. The terms of this Contract shall be extended for such period of time as may be necessary to complete the work which might have been accomplished but for such suspension. If either party is permanently prevented wholly or in part by Force Majeure for period exceeding 4 (four) months from performing or accepting performance, the party concerned shall have the right to terminate this Contract immediately giving notice with full particulars for such Force Majeure in writing to the other party, and in such event, the other party shall be entitled to compensation for an amount to be fixed by negotiations and mutual agreement.
- If a Force Majeure situation arises, the Consultant shall promptly notify Purchaser in writing of such conditions and the cause thereof. Unless





otherwise directed by Purchaser in writing, the Consultant shall continue to perform its obligations under the Contract as far as is reasonably practicable, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

9 Bid Response Forms

This section provides the instructions, guidelines and the relevant forms/formats for the preparation of proposals for the project, **"DEVELOPMENT AND DEPLOYMENT OF E-REGISTRATION SYSTEM WITH SUPPLY, INSTALLATION AND COMMISSIONING OF I.C.T INFRASTRUCTURE ALONG WITH RENOVATION OF DEDICATED SITES OF BOARD OF REVENUE SINDH"**. Bidders are recommended to adhere to these instructions, guidelines and forms/formats for preparing their proposals. All other instructions with respect to "Preparation of Bids" are contained in the RFP and should be adhered to accordingly.

9.1 Technical Proposal

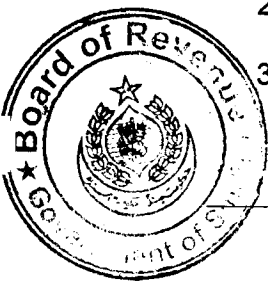
The technical proposal shall be prepared to include the following sections.

- a. Cover Letter
- b. Affidavit
- c. Integrity Pact
- d. Table of Contents
- e. Executive Summary
- f. Bidder Information
- g. Project References
- h. Proposed Project Team
- i. Implementation Plan
- j. Training Services
- k. Documentation
- l. Warranty, Support and Maintenance Plan
- m. Project Plan
- n. Proposed Solution and Compliance Statement
- o. Essentially Required Attachments
- p. Filled Evaluation Forms along supporting documents

9.1.1 Cover Letter

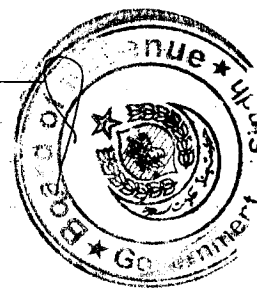
All technical proposals must include a cover letter signed by an individual legally authorized to bind the bidder to both its technical proposal and commercial proposal. The cover letter is not intended to be a summary of the proposal itself. The cover letter must contain the following statements and information:

1. "Proposal and cost schedule shall be valid and binding for 120 days following proposal due date and will become part of the contract that is negotiated."
2. Company name, address, and telephone number of the firm submitting the proposal.
3. Name, title, address, and telephone number of the person, or persons, to contact who are authorized to represent the firm and to whom correspondence should be directed.





4. Proposals must state the bidder's National Taxpayer Numbers & General Sales Tax.
5. We have completed and attached the following documents as per the specimen provided:
 - a. Affidavit
 - b. Integrity Pact
6. Please list all addenda received, including date received.





9.2 BID FORM

To,
Project Director ASR,
Project Management Unit,
Reforms Wing & Special Cell,
Board of Revenue,
Government of Sindh
C-73, Kehkashan, Block-2, Clifton, Karachi.

Sir,

**SUBJECT: DEVELOPMENT AND DEPLOYMENT OF E-REGISTRATION SYSTEM
WITH SUPPLY, INSTALLATION AND COMMISSIONING OF I.C.T
INFRASTRUCTURE ALONG WITH RENOVATION OF DEDICATED
SITES OF BOARD OF REVENUE SINDH**

Having examined the bidding documents, the receipt of which is hereby duly acknowledge, for the above Contract, we, the undersigned, offer to supply, deliver, test and impart training in conformity with the said bidding documents for the Total Bid Price Pak Rupees (in figures _____ in words) or such other sums as may be ascertained in accordance with the Price Schedule attached hereto and made part of this bid.

We undertake, if our bid is accepted, to complete the works in accordance with the Contract Execution Schedule.

If our Bid is accepted, we will provide the performance security in the sum equivalent to 5% of the Contract Price for the due performance of the Contract.

We agree to abide by this Bid for the period of ninety (90) days from the date fixed for bid opening of the Instructions to Bidders, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof in your Notification of Contract Award, shall constitute a binding Contract between us.

We understand that you are not bound to accept the lowest-priced or any Bid that you may receive.

Dated this-----day of -----2017

WITNESS

Signature -----

Name -----

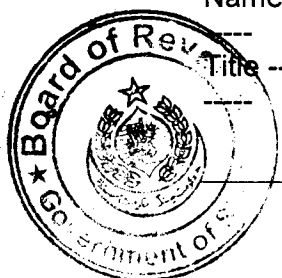
Title -----

BIDDER

Signature -----

Name -----

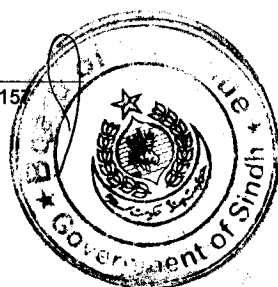
Title -----





Address -----

Address -----





9.3 BID SECURITY FORM

WHEREAS [Name of Bidder] (hereinafter called "**the Bidder**") has submitted its bid dated [date] for the "**SUPPLY & INSTALLATION OF IT HARDWARE EQUIPMENTS & NETWORK COMMUNICATION ALONGWITH SUPPORT & MAINTENANCE SERVICES FOR CAPACITY ENHANCEMENT OF CENTRALISED DATA CENTER FOR AUTOMATION OF STAMPS AND REGISTRATION, BOARD OF REVENUE SINDH**", (hereinafter called "**the Bid**").

KNOW ALL MEN by these presents that we [Name of the Bank] of [Name of Country] having our registered office at [Address of Bank] (hereinafter called "**the Bank**") are bound into the Project Management Unit, Reforms Wing & Special Cell, Board of Revenue, Government of Sindh, Karachi, Pakistan (hereinafter called "**the Purchaser**") in the sum of -----, for which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors and assigns, by these presents.

Sealed with the Common Seal of the Bank this-----day of-----, 2017

THE CONDITIONS of this obligation are:

1. If the Bidder withdraws its Bid during the period of bid validity specified by the Bidder on the Bid Form; or
2. If the Bidder does not accept the corrections of his Total Bid Price; or
3. If the Bidder, having been notified of the acceptance of its Bid by the Purchaser during the period of bid validity:
 - (a) Fails or refuses to furnish the performance security, in accordance with the Instructions to Bidders; or
 - (b) Fails or refuses to execute the Contract Form, when requested. or

We undertake to pay to the Purchaser up to the above amount, according to, and upon receipt of, its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it owing to the occurrence of one or both or all the three above stated conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to -----, the period of bid validity, and any demand in respect thereof should reach the Bank not later than such date.

By [Bank]
(Title)
Authorized Representative





9.4 PERFORMANCE SECURITY FORM

To,

Project Director ASR,
Project Management Unit,
Reforms Wing & Special Cell,
Board of Revenue,
Government of Sindh
Karachi.

WHEREAS _____ *[Name of the Contractor]* hereinafter called "the Contractor" has undertaken, in pursuance of the bid for **DEVELOPMENT AND DEPLOYMENT OF E-REGISTRATION SYSTEM WITH SUPPLY, INSTALLATION AND COMMISSIONING OF I.C.T INFRASTRUCTURE ALONG WITH RENOVATION OF DEDICATED SITES OF BOARD OF REVENUE SINDH**, dated _____ 2017, (hereinafter called "the Contract").

AND WHEREAS it has been stipulated by you in the Contract that the Contractor shall furnish you with a bank guarantee by a recognized bank for the sum specified therein as security for compliance with the Contractor's performance obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor a Guarantee:

THEREFORE WE hereby affirm that we are Guarantor and responsible to you, on behalf of the Contractor, up to a total of _____ *[Amount of the guarantee in words and figures]*, and we undertake to pay you, upon your first written demand declaring the Contractor to be in default under the Contract, and without cavil or argument, any sum or sums as specified by you, within the limits of _____ *[Amount of Guarantee]* as aforesaid without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until _____ day of _____, 2017, or twenty-eight (28) days of the issue of the Defects Liability Expiry Certificate, whichever is later.

[NAME OF GUARANTOR]

Signature _____

Name _____

Title _____

Address _____

Seal _____





10 Technical Evaluation Forms

FORM A1

COMPANY PROFILE NUMBER OF YEARS IN BUSINESS

Date: -----

All bidders are requested to complete the information in this form. Nationality information is also to be provided for foreign owners or applicants who are forming part of the Joint Ventures as required under the bye-laws as a Partnership/Joint Venture.

1.	Name of firm or consortium of firm (Legal Name): <i>(In case of Joint Venture (JV), please also provide legal name of each partner)</i>	
2.	Nature of Business: <i>(Whether the firm is a Corporation, Partnership, Trust etc., show documentary evidence of required nature in business for every year)</i>	
3.	Head Office Address:	
4.	Telephone Fax numbers: E-mail address:	
5.	Place of Incorporation/Registration: Year of incorporation/registration:	
6.	Applicant's authorized representative: Telephone Fax numbers: E-mail address:	
7.	<u>NATIONALITY OF OWNERS.</u>	
	Name:	Country:

Note:

Please attach relevant document such as certificate of incorporation / registration





FORM A2

COMPANY'S PROFILE

Regular employees on company payroll for last one year.

(ATTACH SEPARATE SHEET FOR EACH FULL TIME TECHNICAL STAFF)

POSITION			
PERSONNEL INFORMATION	NAME		DATE OF BIRTH
	PROFESSIONAL QUALIFICATIONS		
	TECHNICAL/PROFESSIONAL CERTIFICATIONS		
EXPERIENCE	NAME OF EMPLOYER		
	POSITION	FROM	TO
PRESENT EMPLOYMENT RECORD	Job Title:		
	Period with firm:		
	Telephone:		Email:
	NTN:		
	Mail Address:		

Note:

Please attach relevant document such as degree(s), certificate(s) and any other deemed necessary as proof of claims in CVs. Also please attach the authenticated Payroll of the staff for the last one year.



**FORM B1****SPECIFIC & GENERAL EXPERIENCE**

Completed at least 03 projects of customized software(including development and deployment).

Use a separate sheet for each contract / Consultancy.

1.	Name of Contract:
	Country:
2.	Name of Procuring Agency, Telephone and Fax Number:
3.	Procuring Agency Address:
4.	Nature of works and special features relevant to the contract:
5.	Contract Role (Tick One): (a) Sole (b) Sub-partner (c) Partner in a Joint Venture
6.	Value of the total contract (in specified currencies) at completion, or at date of award for current contract: Currency..... Currency..... Currency.....
7.	Equivalent in Pak/ Rs.:
8.	Date of Award:
9.	Date of Completion:
10.	Specified Requirements:

Note:

Please attach relevant document such as successful completion certificate and any other document deemed necessary as proof of claims



**FORM B2****SPECIFIC & GENERAL EXPERIENCE**

Completed at least 03 projects of Software Development Projects involving e-payment solution
(including development & deployment).

Use a separate sheet for each contract / Consultancy.

1.	Name of Contract:
	Country:
2.	Name of Procuring Agency, Telephone and Fax Number:
3.	Procuring Agency Address:
4.	Nature of works and special features relevant to the contract:
5.	Contract Role (Tick One): (a) Sole (b) Sub-partner (c) Partner in a Joint Venture
6.	Value of the total contract (in specified currencies) at completion, or at date of award for current contract: Currency..... Currency..... Currency.....
7.	Equivalent in Pak/ Rs.:
8.	Date of Award:
9.	Date of Completion:
10.	Specified Requirements:

Note:

Please attach relevant document such as successful completion certificate and any other document deemed necessary as proof of claims



**FORM B3****SPECIFIC & GENERAL EXPERIENCE**

Completed at least 03 projects of supply, installation & commission of IT hardware (including support & maintenance).

Use a separate sheet for each contract / Consultancy.

1.	Name of Contract:
	Country:
2.	Name of Procuring Agency, Telephone and Fax Number:
3.	Procuring Agency Address:
4.	Nature of works and special features relevant to the contract:
5.	Contract Role (Tick One): (a) Sole (b) Sub-partner (c) Partner in a Joint Venture
6.	Value of the total contract (in specified currencies) at completion, or at date of award for current contract: Currency..... Currency..... Currency.....
7.	Equivalent in Pak/ Rs.:
8.	Date of Award:
9.	Date of Completion:
10.	Specified Requirements:

Note:

Please attach relevant document such as successful completion certificate and any other document deemed necessary as proof of claims



**FORM B4****SPECIFIC & GENERAL EXPERIENCE**

Completed at least 03 projects of supply, installation & commission of IT Network & Communication
(including support & maintenance).

Use a separate sheet for each contract / Consultancy.

1.	Name of Contract:
	Country:
2.	Name of Procuring Agency, Telephone and Fax Number:
3.	Procuring Agency Address:
4.	Nature of works and special features relevant to the contract:
5.	Contract Role (Tick One): (a) Sole (b) Sub-partner (c) Partner in a Joint Venture
6.	Value of the total contract (in specified currencies) at completion, or at date of award for current contract: Currency..... Currency..... Currency.....
7.	Equivalent in Pak/ Rs.:
8.	Date of Award:
9.	Date of Completion:
10.	Specified Requirements:

Note:

Please attach relevant document such as successful completion certificate and any other document deemed necessary as proof of claims





FORM B5

SPECIFIC & GENERAL EXPERIENCE

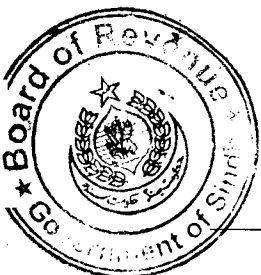
Completed at least 03 projects of construction projects

Use a separate sheet for each contract / Consultancy.

1.	Name of Contract:
	Country:
2.	Name of Procuring Agency, Telephone and Fax Number:
3.	Procuring Agency Address:
4.	Nature of works and special features relevant to the contract:
5.	Contract Role (Tick One): (a) Sole (b) Sub-partner (c) Partner in a Joint Venture
6.	Value of the total contract (in specified currencies) at completion, or at date of award for current contract: Currency..... Currency..... Currency.....
7.	Equivalent in Pak/ Rs.:
8.	Date of Award:
9.	Date of Completion:
10.	Specified Requirements:

Note:

Please attach relevant document such as successful completion certificate and any other document deemed necessary as proof of claims



**FORM C1****QUALITY**

ISO 9001:2008 or equivalent credentials

Use a separate sheet for each credentials.

1.	Name of Certificate:
2.	Grant Date:
3.	Expiration Date:
4.	Accreditation body:
5.	Last date of audit/inspection:
6.	Next due date of audit/inspection:

Note:

Please attach relevant document such as certificates and any other document deemed necessary as proof of claims





FORM C2

QUALITY
CMMI Level 3 or higher

Use a separate sheet for each credentials.

1.	Name of Certificate:
2.	Maturity Levels:
3.	Method:
4.	Grant Date:
5.	Expiration Date:
6.	Accreditation body:
7.	Lead Appraiser ID Number:

Note:

Please attach relevant document such as certificates and any other document deemed necessary as proof of claims





FORM C3

QUALITY
Technical/Management credentials

Use a separate sheet for each credentials.

1.	Name:
2.	Certificate/Credential of employee:
3.	Credential Number:
4.	Grant Date:
5.	Expiration Date:
6.	Accreditation body:
7.	Last date of renewal:

Note:

Please attach relevant document such as certificates and any other document deemed necessary as proof of claims





FORM D1

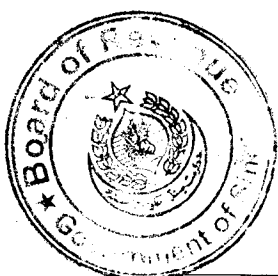
FINANCIAL CAPABILITIES
AVERAGE ANNUAL TURNOVER

Date: -----

YEAR	TURNOVER	INCOME TAX PAID	Name alongwith Cost of IT Projects Executed/ Undertaken	Liquid Assets Balance
2015-16				
2014-15				
2013-14				

Note:

Please attach relevant document such as authenticated audited statements and any other document deemed necessary as proof of claims





10 | Specimen of Affidavit

(To be printed on Rs. 100/- Stamp Paper)

From: _____

To:
The Project Director,
Automation of Stamps & Registration,
C-73, Block-2,
Kehkashan, Clifton, Karachi

SUBJECT: AFFIDAVIT

We, M/s. _____ having our office at _____ hereby undertake that as a result of contract between us and your organization for the "Development and Deployment of e-Registration System with Supply, Installation and Commissioning of I.C.T Infrastructure along with renovation of dedicated sites of Board of Revenue Sindh", if any conflict / dispute arises regarding the execution of work, we shall not resort to any court of law. The dispute / difference, if any, shall be settled as per relevant clauses of the tender document.

We, M/S _____ further undertake that we are not involved in any litigation and have never been black listed by any organization in Pakistan.

We, M/S _____ hereby certify that all software offered by us in our bid is either covered by a valid license or was produced by us and we understand that violations of Software Copyrights are considered fraud, which is, among other remedies, punishable by potential blacklisting from participation in any future government procurements.

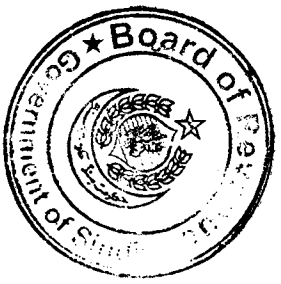
Authorized Signature

M/S _____

Dated _____

(Company's Seal)





Account Payee Only



Allied Bank

0745 SHIREEN JINNAH COL KHI

ABC No.

AAA 14263033

Stationary/Ref No. PO.AAA14263033

2 6 0 9 1 7

Pay to DEPUTY DIRECTOR (A AND F) SPPRA***** or Order

Rupees TWO THOUSAND ONLY

PKR **2,000.00

ALLIED BANKER'S CHEQUE

Payable at issuing branch

Please do not write below this line.

Authorized Signatory
IBS No.
8840

Authorized Signatory
IBS No.
2070

⑈14263033⑈0140745⑈0001757100010000⑈010⑈



BOARD OF REVENUE SINDH

NOTIFICATION

Karachi, dated the 29 December, 2011

No.01-15-10-BOR/46 : In supersession of earlier notification of the Board of Revenue Sindh issued vide No: 05/10/BOR/219/2010 dated: 13-05-2010 **Complaint Resdresal Committee** with the following composition is hereby constituted under **Rule 31 of the Sindh Public Procurement Rules, 2010** to address complaints, if any, in respect of procurement processes under the Schemes of Land Administration and Revenue Management Information System (LARMIS), Geo-database Information System (GIS) and Preservation of Land Records & Revamping of Survey & Settlement Directorate projects being executed by the PMU, R&S Wing Board of Revenue Sindh:

- | | |
|--|----------|
| 1. Senior Member, Board of Revenue Sindh | Chairman |
| 2. Representative of Accountant General, Sindh | Member |
| 3. An independent Professional from relevant field
i.e. IT/ Law/ Industries | Member |


TERMS OF REFERENCES

1. To determine whether there exists any inconsistency in the procurement process with SPPR Rules, 2010 and regulations;
2. To determine whether any unauthorized act or decision made by the Consultant Selection Committee;
3. To reverse any decision of the Consultant Selection Committee or substitute its own decision for such a decision;
4. The Complaint Redressal Committee shall announce its decision within seven (07) days w.e.f. date of reference to the Committee.

SECRETARY TO GOVERNMENT OF SINDH **REVENUE DEPARTMENT**

C.C. to:-

- The Accountant General Sindh, with a request to nominate a representative for the Committee;
- The Member R&S, Board of Revenue, Sindh;
- ✓ The Secretary, Board of Revenue, Sindh;
- _____ (Independent professional from relevant field).


MEMBER (R&S)
BOARD OF REVENUE SINDH

Copy for information to:

- PS to Honourable Minister for Revenue & Relief, Sindh, Karachi
- PS to Senior Member, Board of Revenue Sindh, Karachi





**BOARD OF REVENUE SINDH
REFORMS WING & SPECIAL CELL**

NOTIFICATION

Karachi, dated the 25th September 2017

No.P.S/SMBR/BOR/3101 /2017. With the approval of competent authority, a procurement committee is hereby notified for procurement of goods, works and services under Rule 7 & 8 of SPP Rules 2010 for the tender namely **"DEVELOPMENT AND DEPLOYMENT OF E-REGISTRATION SYSTEM WITH SUPPLY, INSTALLATION AND COMMISSIONING OF I.C.T INFRASTRUCTURE ALONG WITH RENOVATION OF DEDICATED SITES OF BOARD OF REVENUE SINDH"** under the scheme "Automation of Stamps & Registration in All Districts of Sindh" being executed by Project Director ASR under R&S Wing, Board of Revenue, Sindh:

- a. Member R&S, Board of Revenue, Sindh
- b. Project Director (ASR), PMU, BOR
- c. Deputy Director (F&A), ASR, PMU, BOR
- d. Representative of IS&T Deptt., Govt. of Sindh
- e. Representative of Industries Deptt., Govt. of Sindh

Chairman
Member/Secretary
Member
Member
Member

TERMS OF REFERENCES

Procurement Committee shall be responsible for;

- (1) Preparing bidding documents;
- (2) Carrying out technical as well as financial evaluation of the bids;
- (3) Preparing evaluation report as provided in Rule 45;
- (4) Making recommendations for the award of contract to the competent authority;
- (5) Perform any other function ancillary and incidental to the above.

**SECRETARY TO GOVERNMENT OF SINDH
REVENUE DEPARTMENT**

C.C. to:-

- 1. The Chief Secretary, Government of Sindh, Karachi.
- 2. The Additional Chief Secretary (Dev), P & D Department, Govt. of Sindh, Karachi.
- 3. The Secretary Information Science & Technology Department, Government of Sindh, Karachi.
- 4. The Secretary Industries Department, Government of Sindh, Karachi.
- 5. The Project Director ASR, Board of Revenue, Sindh
- 6. The Deputy Director F&A, ASR, PMU, Board of Revenue, Sindh
- 7. The P.S to SMBR. Board of Revenue, Sindh, Karachi.
- 8. The P.S to Member R&S, Board of Revenue Sindh, Karachi.

MEMBER R&S

BOARD OF REVENUE SINDH



**OFFICE OF PROJECT DIRECTOR
AUTOMATION OF STAMPS & REGISTRATION
REFORMS WING & SPECIAL CELL,
BOARD OF REVENUE, GOVERNMENT OF SINDH**

NOTICE INVITING TENDER

Reforms Wing & Special Cell, Board of Revenue, Government of Sindh, invites sealed bids for the "DEVELOPMENT AND DEPLOYMENT OF E-REGISTRATION SYSTEM WITH SUPPLY, INSTALLATION AND COMMISSIONING OF I.C.T INFRASTRUCTURE ALONG WITH RENOVATION OF DEDICATED SITES OF BOARD OF REVENUE SINDH" as per the prescribed procedure of Single Stage - Two Envelope bidding process, under SPPRA Rules 2010 from all Interested bidders under the approved revised ADP (2017-18) Scheme "Automation of Stamps & Registration in All Districts of Sindh".

NOTE: Detailed specifications are available in the Bidding Documents, which can be purchased from the Office of PD ASR, Project Management Unit, Reforms Wing & Special Cell, Board of Revenue, Government of Sindh, adjacent Dr. Ziauddin Hospital, Clifton, Karachi. The bidder may bid for complete assignment. Bids for individual items of the assignment will be rejected.

Instructions:

1. Interested eligible bidders may obtain further information on the bid and collect the Bidding Documents for the above assignment from the Office of Project Director Automation of Stamps & Registration, Reforms Wing & Special Cell, Board of Revenue, Government of Sindh, C-73, Kehkashan, Block-2, Clifton, Karachi, Tel: +92-21-99251415, Fax: +92-21-99251416, 021-99251373 from Thursday September 28th, 2017 during office Hours, i.e. from 9:00 am to 5:00 pm on payment of document fee of Rs. 2,000/- (non-refundable) in the form of a Pay Order / Demand Draft in favour of Project Director Automation of Stamps & Registration, Board of Revenue, Sindh till 12:30 PM on Friday 13th October, 2017. Further information / clarifications may also be obtained from the same office.
2. The Bidding Documents can also be downloaded from the website of SPPRA, i.e. www.pprasindh.gov.pk or the website of BOR, Sindh, i.e. www.borsindh.gov.pk, in which case document fee may be submitted along with the bid. Only the bids submitted with the document fee or a proof of payment thereof will be considered as eligible for participation in the bidding process.
3. Tender Bids in a sealed envelope for the above mentioned assignment as per information given in the Bidding Documents are required. Interested bidders for bids should submit two separate envelopes, i.e. the Technical & Financial Proposals along with 2% bid security of the quoted amount of the total bid in form of a Pay Order / Demand Draft at the Office of the Project Director, Automation of Stamps & Registration, Reforms Wing & Special Cell, Board of Revenue, Government of Sindh, C-73, Kehkashan, Block-2, Clifton, Karachi. Tel: +92-21-99251415, Fax: +92-21-99251416, 021-99251373, on or before Friday 13th October, 2017 at 03:00 PM. Further information / clarification may also be obtained from the same office.
4. The Technical Proposals submitted against the respective RFP will be opened by the Procurement Committee on the same day, i.e. Friday 13th October, 2017 at 03:30 pm in the Committee Room of the ASR Head Office, Board of Revenue, Government of Sindh, Clifton, Karachi, Tel: +92-21-99251415, Fax: +92-21-99251416 in presence of all the bidders, or their representatives, who may choose to be present.
5. All bids received will be opened and evaluated in the manner prescribed in the evaluation criteria of the bidding document.
6. Only bids offered on the prescribed tender forms issued in the Bidding Documents by the Office of the Project Director ASR, Project Management Unit, Reforms Wing & Special Cell, Board of Revenue, Government of Sindh, shall be accepted. However, additional sheets may be attached, if necessary.
7. Conditional Tenders / Applications will not be entertained.
8. The Procuring Agency may cancel the bidding process at any time prior to the acceptance of a bid or proposal under the Rule 25 (1) of SPP Rules 2010.
9. The Procuring Agency shall announce the results of bid evaluation in form of a report, giving justification for acceptance of a bid or proposal, subject to the relevant provisions of SPP RULES 2010.
10. This notice can also be seen in the website of SPPRA i.e. www.pprasindh.gov.pk as well as on the website of Board of Revenue, Sindh, i.e. www.borsindh.gov.pk.
11. Please note that in case of an emergency posing a natural calamity or declaration of a public holiday by the Government of Sindh, the bid submission and opening timelines would be extended to the next working date.

**Project Director,
Automation of Stamps & Registration,
Board of Revenue, Government of Sindh.**

Office Address: C-73, Kehkashan, Clifton, Block-2, Karachi, Pakistan.
Ph: 021-99251418, Fax: +92-21-99251417

INF/KRY/3926/17





OFFICE OF PROJECT DIRECTOR AUTOMATION OF STAMPS & REGISTRATION
REFORMS WING & SPECIAL CELL, BOARD OF REVENUE GOVERNMENT OF SINDH

NOTICE INVITING TENDER

Reforms Wing & Special Cell, Board of Revenue, Government of Sindh, invites sealed bids for the **"DEVELOPMENT AND DEPLOYMENT OF E-REGISTRATION SYSTEM WITH SUPPLY, INSTALLATION AND COMMISSIONING OF I.C.T INFRASTRUCTURE ALONG WITH RENOVATION OF DEDICATED SITES OF BOARD OF REVENUE SINDH"** as per prescribed procedure of **single stage - two envelope** bidding process, under SPPR 2010 from all interested bidders under the approved revised ADP (2017-18) scheme "Automation of Stamps & Registration in All Districts of Sindh".

NOTE: Detailed specifications are available in the bidding documents, which can be purchased from the office of PD ASR, Project Management Unit, Reforms Wing & Special Cell, Board of Revenue, Government of Sindh, adjacent Dr. Ziauddin Hospital, Clifton, Karachi. The bidder must may bid for complete assignment. Bids for individual items of the assignment will be rejected.

Instructions:

1. Interested eligible bidders may obtain further information on the bid and collect the bidding documents for the above assignment from the office of Project Director Automation of Stamps & Registration, Reforms Wing & Special Cell, Board of Revenue, Government of Sindh, C-73, Kehkashan, Block-2, Clifton, Karachi, Tel: +92-21-99251415 / Fax: +92-21-99251416/ 021-99251373 **from Thursday September 28th 2017** during office Hours, i.e. from 9:00 am to 5:00 pm on payment of document fee of Rs. 2,000/- (non-refundable) in the form of Pay order/Demand Draft in favor of Project Director Automation of Stamps & Registration, Board of Revenue, Sindh **till 12:30 PM on Friday 13th October 2017**. Further information / clarifications may also be obtained from the same office.
2. The bidding documents can also be downloaded from the website of SPPRA, i.e. www.pprasindh.gov.pk or the website of BOR, Sindh, i.e. www.borsindh.gov.pk, in which case document fee may be submitted alongwith the bid. Only the bids submitted with the document fee or a proof of payment thereof will be considered as eligible for participation in the bidding process.
3. Tender Bids in sealed envelope for the above assignment as per information given in the bidding documents are required. Interested bidders for bids should submit two separate envelopes, i.e. the technical & financial proposal for along with 2% bid security of the quoted amount of the total bid in the form of Pay Order / Demand Draft at the office of the Project Director Automation of Stamps & Registration, Reforms Wing & Special Cell, Board of Revenue, Government of Sindh, C-73, Kehkashan, Block-2, Clifton, Karachi,, Tel: +92-21-99251415/ Fax: +92-21-99251416, 021-99251373, on or before **Friday 13th October 2017 at 03:00 PM**. Further information / clarification may also be obtained from the same office.
4. The **technical proposals** submitted against the respective RFP will be opened by the Procurement Committee on same day, i.e. **Friday 13th October 2017 at 03:30 PM** in the Committee room of the ASR Head Office, Board of Revenue, Government of Sindh, Clifton, Karachi Tel: +92-21-99251415, / Fax: +92-21-99251416 in presence of all the bidders, or their representatives, who may choose to be present.
5. All bids received will be opened and evaluated in the manner prescribed in the evaluation criteria of bidding document.
6. Only bids offered on the prescribed tender forms issued in the bidding documents by the office of the Project Director ASR, Project Management Unit, Reforms Wing & Special Cell, Board of Revenue, Government of Sindh, shall be accepted. However, additional sheets may be attached, if necessitated.
7. Conditional tenders / applications will not be entertained.
8. The Procuring agency may cancel the bidding process at any time prior to the acceptance of a bid or proposal under Rule 25 (1) of SPP Rules 2010."
9. The procuring agency shall announce the results of bid evaluation in the form of a report, giving justification for acceptance of a bid or proposal, subject to the relevant provisions of SPP RULES 2010.
10. This notice can also be seen in the website of SPPRA i.e. www.pprasindh.gov.pk as well as in the website of Board of Revenue, Sindh, i.e. www.borsindh.gov.pk
11. Please note that in case of any emergency situation posing a natural calamity or declaration of public holiday by the Government of Sindh, the bid submission and opening timelines would be extended to the next working date.



-sd/-

Project Director

Automation of Stamps & Registration
Board of Revenue Government of Sindh

Office address: - C-73 Kehkashan Clifton Block 2, Karachi.

Ph: 021-99251418, Fax: +92-21-99251417

EXTRACT OF PROCUREMENT PLAN

UNDER THE ADP SCHEME NAMELY "AUTOMATION OF STAMPS & REGISTRATION, EXTENSION TO ALL DISTRICTS IN SINDH.

FOR THE FINANCIAL YEAR 2017-2018

S. No.	Description of Procurement	Quantity (Where applicable)	Estimated Unit Cost (Where applicable) (Millions)	Funds allocated (Million)	Source of Funds (ADPs Non ADPs)	Proposed Procurement Method	Timing of Procurements				Remarks
							1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	
01	"DEVELOPMENT AND DEPLOYMENT OF E-REGISTRATION SYSTEM WITH SUPPLY, INSTALLATION AND COMMISSIONING OF I.C.T INFRASTRUCTURE ALONG WITH RENOVATION OF DEDICATED SITES OF BOARD OF REVENUE SINDH"			Above 1 million	ADP	Single Stage Two Envelope Method	✓	✓			Rule 46(2)

-/Sd
Member R&S
Board of Revenue, Sindh

CC:-

- The Sindh Public Procurement Regulatory Authority, Govt. of Sindh, Karachi

