**TECHNICAL PROPOSAL**

**Smart Extension System**

Abu Dhabi Agriculture and Food Safety Authority

Submitted By:

VERBANET TECHNOLOGIES L.L.C

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# **KEY DETAILS**

**PROJECT NAME CLIENT**

Smart Extension System Abu Dhabi Agriculture and Food Safety Authority

**CLIENT CONTACT CLIENT ADDRESS**

Mr. P.O.Box 123

ABC Street

Dubai

U.A.E

**PROPOSAL SUBMISSION PROPOSAL ID NO.**

06.07.2020  AD/BP/25042018/1820/2

**PROPOSAL VALID UNTIL ANTICIPATED START DATE**

10.08.2020 00.00.00

**PROPOSAL SUBMITTED BY PROPOSED TECHNOLOGY**

Verbanet Technologies L.L.C ASP.NET Dubai, U.A.E **APPLICATION TYPE**

+971 4 297 3236 Web & Mobile Application

+971 50 765 2345

# **PROJECT SCOPE**

Abu Dhabi Agriculture and Food Safety Authority (hereafter referred to as “Client”) has approached Verbanet Technologies L.L.C., (hereafter referred under its trade/brand name as” Verbat”) to develop a Smart Extension System to revamp and consolidate all TSD services in one product to improve farmer’s services and improve the quality, agility, user experience, accessibility of services in communication channels modes such as Web and Mobile

**OBJECTIVE**

The overall objective is to develop a user-friendly digital extension system with easy access of various stakeholders (Extension staff, farmers, technical and management staff) committed to promote agricultural sustainability and development without depleting natural resources.

The application shall be developed in both Arabic and English and shall be suitable to be operated by people with limited IT skills. Compilation, processing and analysis of quantitative data and qualitative information shall lead to:

* Improvement of the technical advisory services provided during implementation of planned field activities
* Higher level of farm owners’ adoption of recommended agricultural practices and innovative technologies
* Efficient monitoring and evaluation of extension staff and programs; and
* Prompt management decision-making to overcome constraints and tackle priority issues hindering farm production and sustainability.
* Focus on farm visits as the basis for field extension approach to assist farmers in improving their production, preserving natural resources and ensuring sustainability of the farming systems
* Provide the field extension staff with unified technical messages for the various components of the agricultural production, using recommended technology packages
* Establish a systematic and continuous feedback on field implementation with built-in components for performance monitoring and evaluation.
* Assessment and measurement of agriculture sustainability index (44 indicators)
* Capability of assessing the control points of good agricultural practice for pre-certification of AD GAP project.

**SCOPE**

1. Provide an Agriculture Product database to manage all SES data including:
   * Farm visit records
   * Relevant agriculture indicators gathered
   * Monitoring and evaluation of ADAFSA staff and programs related to field services
   * Abu Dhabi Farm Owners and contact information (linked to emirates ID)
   * Integrated with ADAFSA’s exiting CRM application
2. Farm visit records shall be geo-enabled to identify and confirm the farms.
3. Provide an intuitive user-friendly tablet/mobile application to record the critical extension control points, assessments and visit information, initiate communications with stakeholders and generate instant reports;
4. Provide a dynamic forms creation and deployment system to the mobile device with version control which function in online and offline mode with sync capabilities.
5. Provide the workflow for the mobile application to ensure data is collected efficiently and accurately and relevant data is spatially enabled;
6. Provide intelligent processes that assist extension engineers to capture data, ensure data integrity and prevent duplication of both work and records;
7. Customer information integration with Siebel system such as: farm information, location, farm owner information, etc.
8. Provide and implement the necessary protocols to ensure data security and integrity;
9. Provide a web based intuitive and user-friendly to enable management to query and analyze the data and export the data to other operational systems;
10. Provide necessary technology and frameworks to enable the database to be updated and accessed from web as well as integrate with other internal operational system;
11. Advise on appropriate mobile and other infrastructure requirements to best meet business needs.

## PROPOSED SOLUTION MODEL

**STAND- ALONE FIXED BID**

Verbat will be following a stand–alone fixed bid solution delivery model wherein the required solution would be devised and a suitable pricing would be offered. Verbat’s solution architects have conducted a thorough research on the requirements and have come to the conclusion that our proposed solution, which is detailed further in this document, will meet the requirements put forth by the client.

**KEY STRENGTHS OF OUR SOLUTION**

* Strong and Scalable platform accommodating to future enhancements
* A framework which acts as a solution accelerator with building blocks that can be re-used in n future for building new components and features.
* Our light weight framework used consumes fewer system resources thereby making the application perform faster.
* All security aspects are considered

## FUNCTIONAL REQUIREMENTS

The main features and functionalities of the application to be developed are presented below:

The Smart Extension System Application will be downloaded on tablets/mobile to be used by the field extension staff during farm visits in their duty stations. The application will cover two parts:

### SES DIGITAL APPLICATION

**PART A: Technical Data and Information**

The electronic format of the SES Application shall include the same workflow of the monthly Excel spreadsheets/tables and shall present all components, sub-component activities and tasks (control points). The system shall include following components but not limited to:

* Component I: Date Palm
* Component II: Forage Crops
* Component III: Open Field Crops
* Component IV: Fruit Tree
* Component V: Traditional Green Houses Vegetables
* Component VI: Hydroponic Vegetables

Note: Each main component includes number of sub-components activities and tasks (control points) each component is based on monthly activities, except the agricultural production is seasonal. Each component is divided into three critical areas, namely agricultural practices, irrigation and crop protection

Example:

DP Date Palm

DP-1 Agricultural practices, DP-2 Plant protection, etc.

DP-1-1 Pollination, DP-1-2 Irrigation basin, DP-1-3 Fertilization, etc.

DP-1-1-1 Cleaning the top of the tree, DP-1-1-2 Pollen application, etc.

The Application shall have a dynamic form that:

* Allow AEE to access all components, sub-components, activities and tasks during a specific month of the year in each farm visit (A to G)
* Control points for activities and tasks to be checked during the date of the visit
* Evaluation scale (1=activity/task neglected to 4=activity/task well performed)
* Assessment of current situation (activity/task actually performed in the farm)
* Assess the farms and generate automatic screening/ pre-certification of Abu Dhabi GAP (AD GAP control points are embedded into the system as part of subcomponents)
* Actions to be taken at the farm level with Foreman/Laborer during the visit;
* The extension officer shall fill out the report inside the farm during his farm visit.
* After the completion, the system shall create review window so that the extension officer can correct any errors or mistake in the report. If the there is any mistake the extension officer shall be able to correct that mistake in the system.
* Then the extension officer sends the report to the extension center manager for approval
* The extension center manager shall review the report approve it and then send to the farm owner.
* Reference materials related to the specific activity/task (guides for GAP)
* Message to be communicated to the farmer owner; the cumulative messages will be instantly forwarded to the farm owner as a report on the visit to his farm.

**PART B: Farm Information System (FIS) and Agriculture Sustainability Index**

Farm Information System and Agriculture Sustainability index shall include 44 indicators (to update ADAFSA database)

During farm visit in addition of technical activities reporting, AEE will be requested to provide updated quantitative data and qualitative information on two main aspects on six-monthly basis (October-November and March-April of each year) which are:

* Farm Management (Cleanness of the farm, storage facilities, logbooks for entrants, other farm related matters)
* Farming System Updating: number of date palms and fruit trees, forage crops area, number of newly planted trees, acreage for vegetables, number of green houses, etc.)

Moreover, each six-month AEE is reporting on changes of farm characteristics, to updating ADAFSA database.

* Agriculture sustainability index which include 44 indicators will be measured yearly during the farms visit.

### SES UTILIZATION

The SES Application shall capture the location data and time of utilization whenever it’s being used with geo-enabled features. Each AEE shall have a username and password to access SES Solution which shall be the same of his computer login which shall capture and monitor all their activities such as advices that they provide to farm owners and farm workers.

The system shall be capable to replace any list of farms under the responsibility of one extension officer to another; however, this might need some approvals at extension managers’ level.

* The extension center manager raises the request to replace a list of farms under the responsibility of one extension officer to another
* The request received by the area manager to approve/reject the name of the new extension officer to take over the designated farms. If approved, seek the approval of the extension section manager
* Extension section manager receive the request for approve/reject. If approved, the request is executed

**Data Capture Business Practice**

During the farm visit and inside the perimeter of each farm, the Agricultural Extension Engineer (AEE) can “Log-in” his tablet using a username and a password, the system shall capture ADAFSA Active directory login. At this site (within the geo-coordinates), a window will open showing the farm characteristics (farm location, farm owner, farm number, total area, number of palm and fruit trees, and number of greenhouses). These basic data are immediately retrieved from ADAFSA database.

* In the same window a link shall allow the AEE to open the SES solution checklist content: all the components (from A to G) and related codes (DP-1, DP1-1, etc.).
* The AEE will proceed with the assessment of the farm on-going activities/the current situation (Column D\_ Appendix1). In case of diagnosis difficulties, he can consult the reference document attached in each component. Once he has a clear idea on the situation on hand, he will click on the appropriate cell in the evaluation scale (Column C\_ Appendix1)
* The content of Column E\_ Appendix1 (Message to the Farm Owner) shall be dropped in a report\_ Appendix2\_ to the Farm Owner, forwarded automatically and instantly at the end of the farm visit, for follow-up actions (documented with photos, if deemed necessary).

Moreover, SES solution shall also contain a comprehensive list of Abu Dhabi farm owners with contact details and automatically report all AEE activities in their respective farms.

**Stakeholders’ Access, Logins and Reporting Hierarchy**

SES Application shall be accessible from tablets and personal computers for a wide range of stakeholders at different levels of Technical Services Division (TSD) institutional structure for a multitude of various purposes. It shall produce summarized version of farm visit reports shall also be sent to the relevant managers and supervisors. The reports data shall be accessible to all stakeholders as permission. Following are examples of each level access and reports that shall be generated thru the system.

* Field Level:

1. Agricultural Extension Engineers (AEE): In addition to capturing data during on-going farm visit in SES Application, he can also have access to his own previous farm reports and outstanding issues in “Read only” mode.
2. The reports shall include all the details of assigned farms (components, subcomponents and control points)- month by month report and accumulative reports throughout the year and all farms in the extension center (components, subcomponents and control points)- month by month report and accumulative reports throughout the year
3. Farm Owners: They will be informed about the farm visits through Notification messages on their mobile phones. Furthermore, a page in ADAFSA Web Site shall be created and entitled “Mazraati” to be access SES by Farm Owners to read the AEE detailed reports related to their respective farms and take suggested appropriate actions to improve their farming practices and increase their crop production.
4. Two types of reports shall to be sent to the farm owners:
5. Brief report about the status of the farm including only the farmer messages which have already embedded in the system. This can be sent to the farmer through SMS message or via e mail or/and accessed by the farm owner through mobile application/web page
6. Detailed report about the status of the farm. Each farm owner is planned to have an account in mobile app/ web page to access the detailed report
7. Moreover, farm owner shall review monthly report for the farm visit and the consecutive reports for 12 months

* Local/FRM Unit:

1. Extension center manager shall review and edit the visit report if needed then approve it before sending to the farm owner.
2. Farmers Relations Managers and their assistants can have access in “Read only” mode to all reports prepared by the AEE in their respective Units:
   * Real time individual AEE report while he is implementing the farm visit
   * Monthly reports prepared by a particular AEE
   * Multi-monthly reports prepared by a particular AEE
   * Reports of all AEE working under his supervision
3. Agricultural Extension Engineers: Each AEE can have restricted access to only his own monthly/multi-monthly reports in “Read only” mode.

* Regional Level:

1. Area and Section Managers [in Abu Dhabi (AD), Al Ain (AA) & Western Region (WR)] can have access to:
   * Reports on specific agricultural practices;
   * Performance of AEE in a given Center or Area;
   * Change in the statistical data for the various farming systems;
   * Alerting regional Subject Matter Specialists (SMS) for urgent actions on critical issues (spread of pests, exaggerated waste of irrigation water, degradation of farms conditions, etc.).
2. Subject Matter Specialists (AD, AA & WR). They can have access to:
   * Individual AEE report in case they are notified and needed for specific technical backstopping
   * Identify specific technical training needs of AEE or to take appropriate action to tackle technical issues in a specific Center, Area or Regions;
   * Provide sound recommendations for TSD Management and Technical

Units on specific issues in particular Centers, Areas or Regions.

1. Area/Section Managers (AD, AA & WR)

They can have access to all kind of reports prepared by various staff working under their supervision for different purposes:

* + Monitoring and evaluation of regional programs and technical staff;
  + Mobilizing regional human and material resources to enhance field activities and/or programs.
* TSD/Central Level:

In light of the reports prepared and submitted by regional Managers and the team of Subject Matter Specialists, the Director of TSD and SES Advisory Committee shall have a clear picture of the agricultural sector in Abu Dhabi Emirate and shall be able to:

* + Make realistic management decisions related to field program development as well as reinforcement of human and financial resources
  + Provide ADAFSA Executive Management & Decision Makers with sound suggestions of relevance to policies and strategies for sustainable agricultural and rural development

**SES Outputs**

The user-friendly SES Application shall allow for specific data analysis to access and retrieve data at different institutional levels, using a wide array of variables as detailed above (period, geographical area, agricultural practice, specific activity/task, etc.). The expected outputs shall include but not limited to:

* Summary reports prepared AEE after their farm visits
* Retrieval of all summary reports prepared by a single or a group of AEE in a particular geographical area and for a certain period of time
* Retrieval of reports addressed to Farm Owners following each AEE visit in a given Center, Area or Region on a monthly or annual basis
* Search for statistical data on a single or several agricultural practices/tasks during a certain period of time (month, quarter, or year) in all farms of a given geographical area (Center, Area or Region)
* Retrieval of reports reflecting trends (progression or regression) of specific aspects of the agricultural production system (irrigation, plant protection, etc.) using location and time variables
* Search for statistical data on each of the 3 components/farming systems (date palm, open-field crops, green houses) in various geographical areas over variable periods of time
* Assessment of AEE performance: Key Performance Indicators (KPIs) could include number of farm visits implemented compared to those initially planned on a monthly, quarterly or annual basis, average time spent in each farm visit, accuracy in assessment of farm current situation by AEE and his quality of reporting
* Impact of technical advisory services on farming practices in the farms of a given geographical area (e.g.: infestation progress or regression, increase or decrease of irrigation leakages/water waste, etc.);
* Screening report of the farms that reached the pre-certification standards of AD GAP
* Report on farms sustainability measurement Indicators (44 indicators) of farm viability and sustainability at the local, regional and Emirate levels using appropriate formulas.

In order to obtain such indicators, every component, sub-component, technical activity and task included in the system shall have a specific weight (and this functionality shall be configurable & version controlled). Example: in a farm where the farming system is based on growing Date Palm only:

* + DP-1 Agricultural Practices: 15 %
  + DP-2 Plant Protection: 45 %
  + DP-3 Irrigation: 40 %

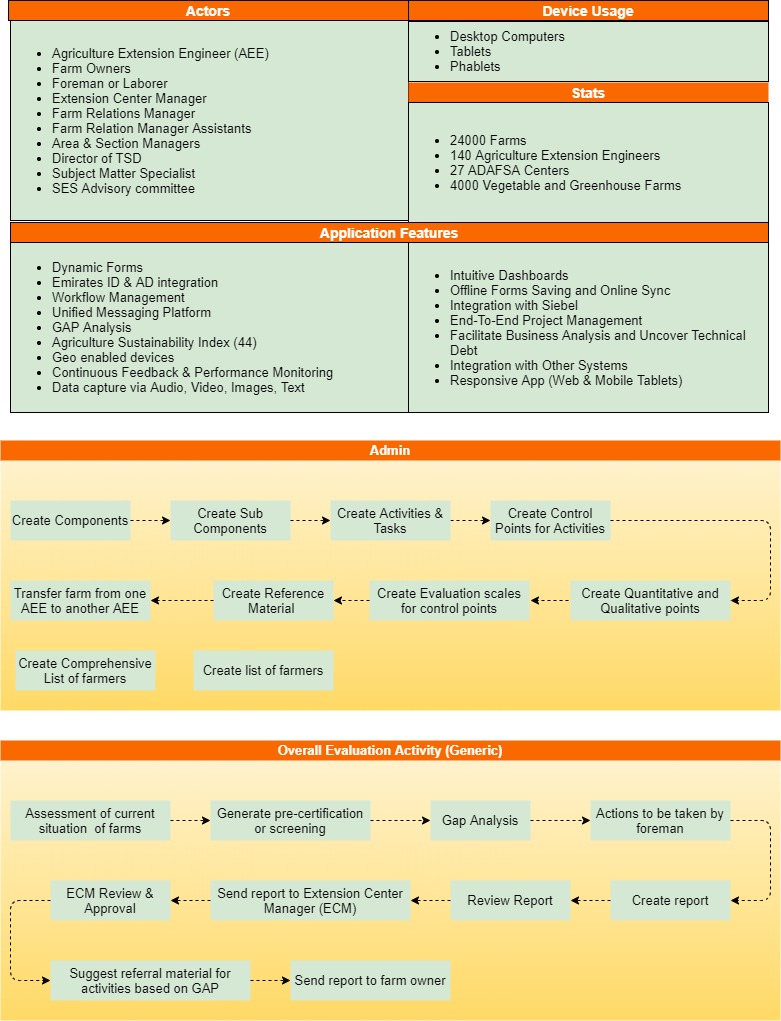
Within this activity each task (DP1-1 pollination, DP 1-3 fertilization, etc.) will have a particular weight; the total being equal to the weight of the activity (15%).

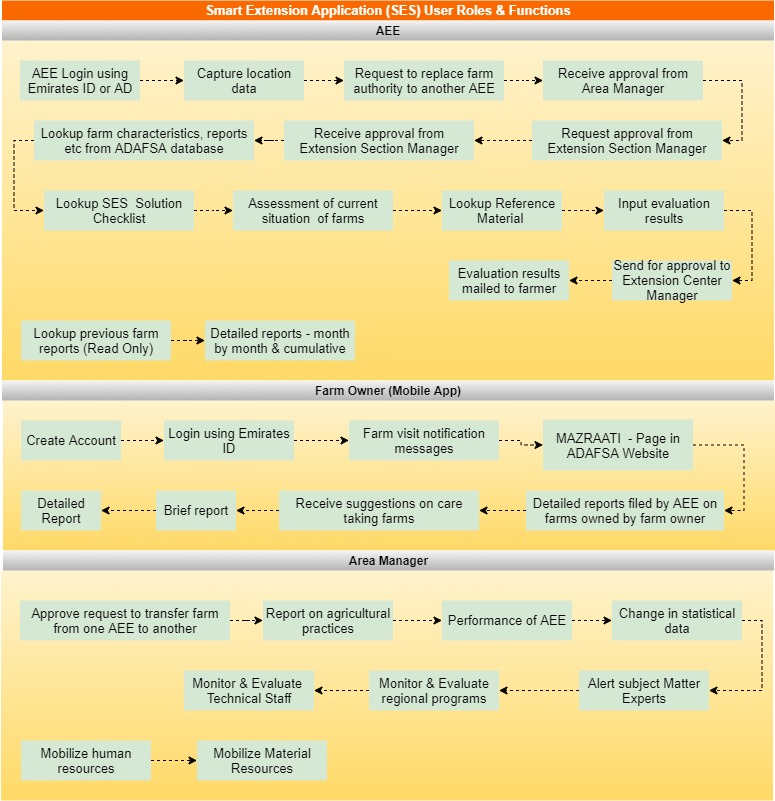
For those farms growing, for instance, Date Palm and Open Field Crops, the weights will be more detailed for the various crops and the different related activities and tasks. Furthermore, a value will be allocated to each of two sub-components of the farming system (e.g.: Date Palm: 60% and Open Field Crop: 40%).

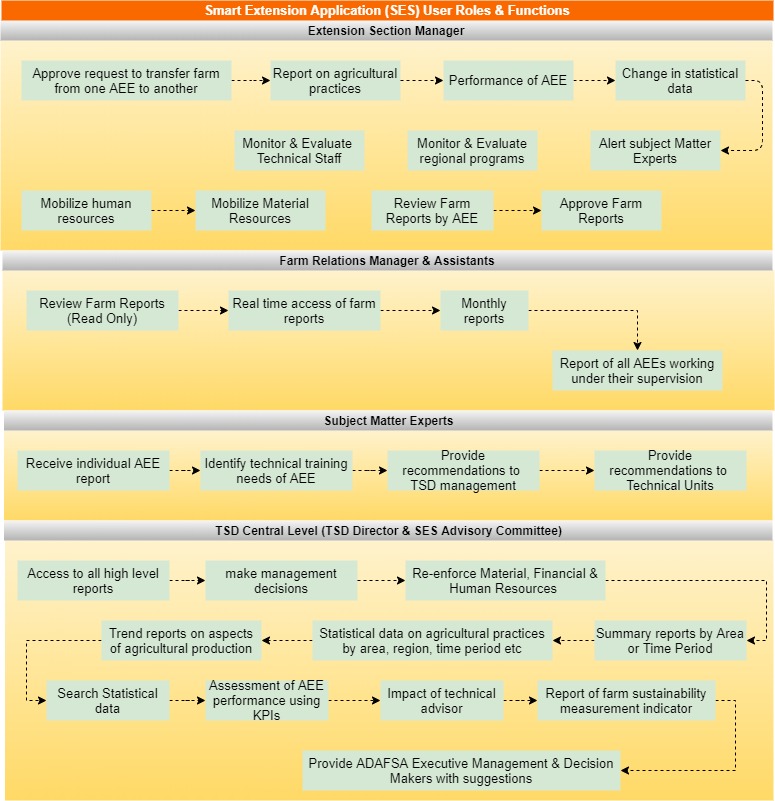
**Integration**

* Siebel Application
* SMS Gateway
* Email Application
* ADAFSA Active directory

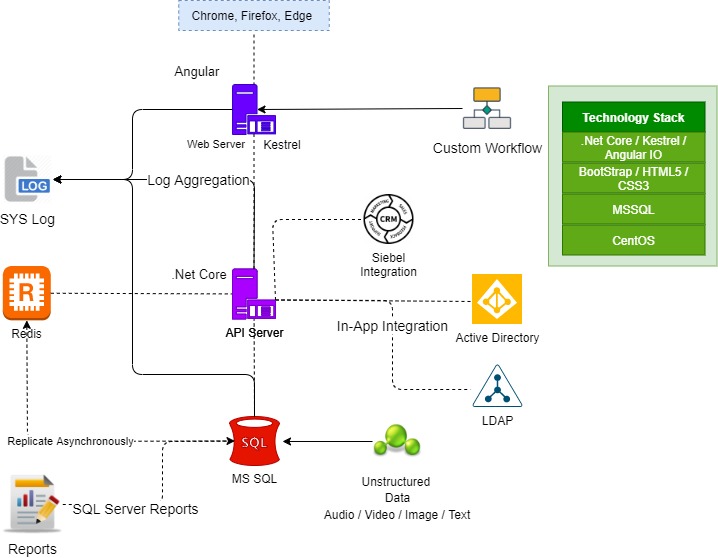
### Solution Workflow



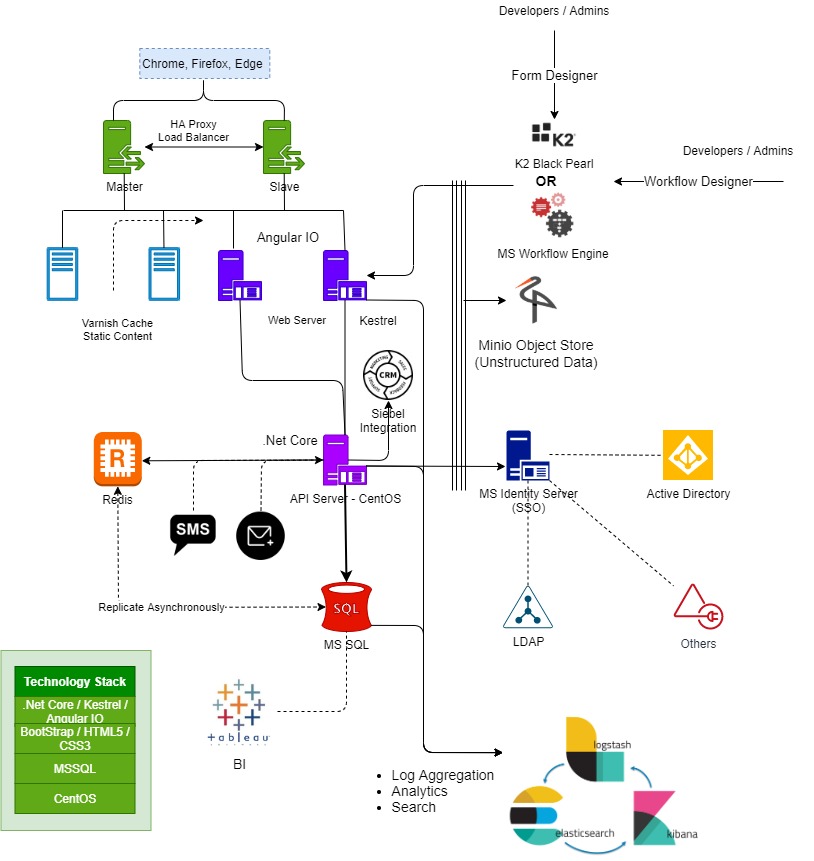




### Minimum Viable Architecture (Upgradeable to Scalable Arch)



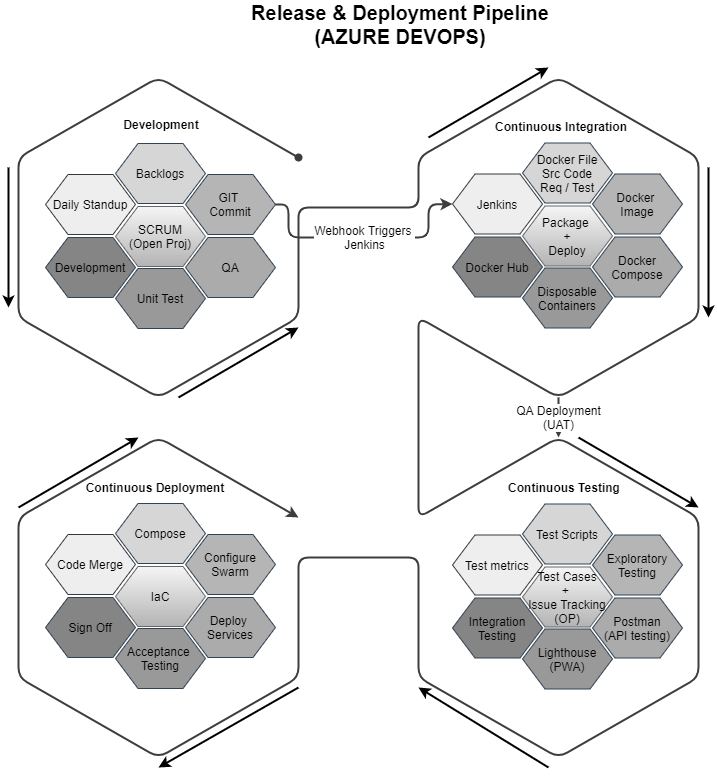
### Scalable Architecture



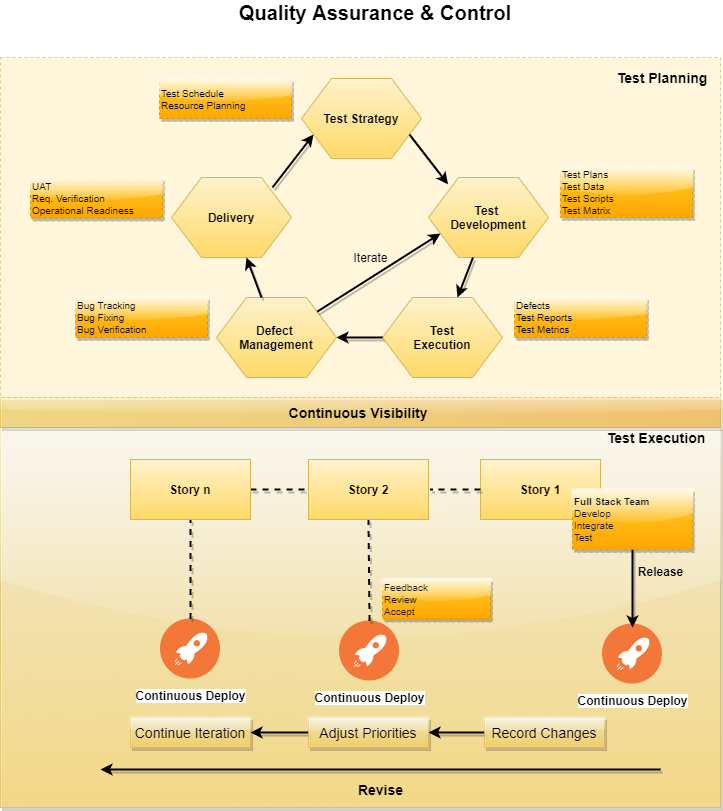
### Architecture Rationale

### Network Topology

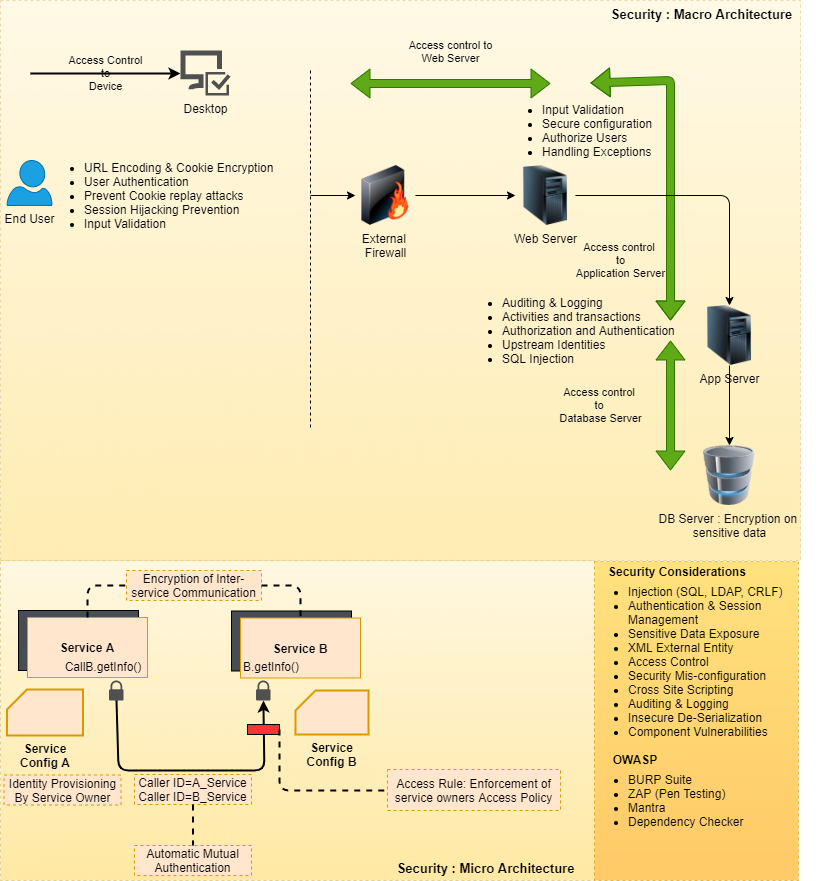
### Release and Deployment Pipeline



### SQA Lifecycle



### Security Framework



## NON-FUNCTIONAL REQUIREMENT (OTHERS)

|  |  |
| --- | --- |
| **Requirements** | **Details** |
| User Experience and  UI Design | * The application will be developed only in English and Arabic * The layout and graphical components will be created considering the usability factors |
| Performance | * Application will allow users to have smooth and quick access to the information or services they require. |
| Security | * Web security standards will be followed. |

## PROPOSED SYSTEM ENVIRONMENT

****

ASP.Net, MVC

Angular

Windows

IIS

MS SQL

**MS SQL2012  
Windows 8/10  
Web Services**

HTML5 / CSS3

Java Script

## TECHNICAL CONFIGURATIONS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | **Description** | **Technology** | **Support** | **Access** | **Access**  **Method** |
| **Customer**  **Mobile**  **Application** | Abu Dhabi Food Control Authority mobile application, which is targeted to all customers to provide a collection of smart services needed ~~information~~, it is available on Google Store and Apple Store, it is considered one of the channels that is used to deploy our business services on. | ~~Apache Cordova~~  ~~HTML 5~~  ~~Embers (5.0)~~  ~~jQuery (3.2)~~  ~~CSS (3.0)~~  Android / IOS  Native | 24X7 | External | Mobile |
| **Agriculture**  **Directory** | Mobile application which is built In line with its efforts to develop the extension systems of the agricultural sector, both crop and  animal production, in the Emirate of Abu Dhabi, to ensure farmers and livestock breeders have easy access to integrated knowledge, good farming practices and means,  and best methods to enhance  production efficiency and achieve an appropriate economic return for them; and to raise awareness of farmers, livestock breeders and all segments of society about agriculture, the Abu Dhabi Agriculture and Food Safety Authority has developed a smart app offers users access to rich and valuable content. | ~~React Native~~  ~~HTML 5~~  ~~EmberJS (5.0)~~  ~~jQuery (3.2)~~  ~~CSS (3.0)~~  Android / IOS  Native | 24X7 | External | Mobile |
| **eservices** | A web portal that has all our  eservices which is provided to our customers to facilitate their applications | Microsoft ASP.NET  (4.5)  K2 Black Pearl (4.72)  Microsoft WCF 2017  Microsoft SQL  Server (2012)  Bootstrap 4.0  jQuery 3.2 | 24X7 | External | Web |
| **Control**  **Management**  **System** | Oracle Seibel system which  contains all information related to CRM (Farms, and Farms owners’ details) also it has all animal identification and registration system, and agriculture control | Oracle Seibel | 8X5 | External | Web |

### DEVELOPMENT TOOLS

* ASP.Net 4.5
* MS SQL
* HTML5 / CSS 3
* Angular
* Web services, Ajax, JavaScript

### RECOMMENDED WEB HOSTING PACKAGE- DEDICATED HOSTING

* Operating System : Windows Server
* CPU : 4 core
* Domains: Unlimited
* Disk Space: 200 GB
* Monthly Bandwidth: 50 GB
* Web site Server Software – IIS 7.5 +
* ASP.NET 4.5

### BROWSER

* Chrome version: 56
* Firefox version: 51
* Internet Explorer:11
* Safari:13

### HARDWARE

The application is reliant on hardware interfaces to provide a seamless automated user experience.

* Computer with Windows 8 or 10 OS
* Compatible Browsers as specified in section 6.2.3

### TECHNICAL STANDARDS

* Screen Resolutions

1080 x 1920, 720 x 1280, 750 x 1334, 640 x 1136

* Testing Devices
  + Android
    - Moto G( Marshmallow)
    - Alcatel (nougat)
    - Google Pixel (pie)
  + iOS
    - iPhone 5S and above
  + OS Version
    - KitKat and above
    - iOS 9.0+

### TECHNICAL GUIDELINES

The guidelines provide instructions and conditions that will be adhered to during the development of the mobile application.

* API will be used, as the case may be, in realizing the features and functionalities mentioned
* The client will finalize the functional requirements and UI/UX before the commencement of any development activities
* Verbat will be testing the app in the mentioned devices only. Testing on devices other than the ones mentioned under the “Technical Standards “ will have to be specified and provided by the client at the beginning of the development phase
* The client will have to provide the details of the testing devices they are using before the start of development phase.
* Client should provide the relevant Developer's Account credentials before the development phase. In case Verbat needs to create the developer id additional charges will be incurred by the client
* The apps will be developed / created within the guidelines of Android and IOS. Verbat will strictly follow the guidelines provided by the respective store. Verbat will inform the client if any of the client requirements/ request deviates from it.
* Customization of the features of the app will be susceptible to the limitation imposed by the respective platform/ store.
* OS version support will be limited to the ones mentioned under ‘Technical Configuration’, further support will have to go through change management.

## PROJECT DELIVERY

### PROJECT MANAGEMENT

The Verbat development center strictly follows industry standards on quality. The project management is process governed by the Verbat Quality Management system and is put to verification through internal audit programs that happen from time to time. Verbat will dedicate a project manager for the proposed implementation. Verbat proposes Client to identify one project manager who will be driving activities to be undertaken by Client to be the single point of contact for Verbat.

### ROLES & RESPONSIBILITIES

Verbat will assign a dedicated Project Manager/Project Lead to lead the project, who will be the first point contact for Client. He/she will be responsible for planning and managing the various activities within the project. He/she will work closely with Client Project Manager, to give periodic status updates and ensure high level of visibility and comfort on the progress of the project. The Project Manager/Project Lead will lead the co-ordination between Verbat and Client, thus enabling smooth transitioning of Client requirements to the Verbat ’ offshore delivery team, and provide visibility as well as comfort on the progress of the services to Client.

He/she will have periodic meetings with Verbat ’ s Senior Management, thus ensuring Verbat ’ Management commitment and focus on Client initiatives.

### PROJECT IMPLEMENTATION PLAN

Verbat will be providing the solution in a stand-alone fixed bid approach which ensures minimum viable solution for quick wins with core focus on the long-term business objective and outcome. Once the implementation is over, Verbat will initiate the application maintenance process (once the maintenance contract is signed) which continues to extend after the implementation.

### DELIVERABLES

**Requirement Analysis**

* Project Charter
* Project Management Plan
* Functional Specification Document (FSD)
* Software Requirement Specification (SRS)

**Solution Design**

* Detailed Design Document (DDD)
* Integration Design Document (IDD)

**Implementation**

* Configuration and Development Manual

**Stabilization**

* Test Plan
* Business Test Case Scenarios
* Technical Test Case Scenarios
* User Acceptance Test Certificate
* Performance Acceptance Test Certificate
* Integration Acceptance Test Certificate

**Deployment**

* Deployment Manual
* User Manual

**Handover**

* Operational Handbook
* Administrator Training Certificate
* Technical Training Certificate

### DELIVERY ACTIVITY SUMMARY

|  |  |
| --- | --- |
| Activities | Description |
| Detailed requirement Analysis | Verbat team to conduct detailed study of requirement for the phase. If clarification is required, team will reach out to Client for more information and/or time for discussions. |
| DB Design | DB design for central and test DB. |
| Software Requirement Specification document (SRS) | Once the requirement analysis is completed, Verbat team will submit the SRS document for approval |
| UI/UX Design, Prototyping | Based on the SRS, Verbat UX/UI team will work on the UI/UX of the screens and submit for approval |
| Functional Specification Document (FS) | Once the UI/UX is approved, Verbat shall submit an FS document for approval. |
| Development | Actual system development starts based on the FS. This involves detailed design and software development of Web Application. |
| Testing | Test Planning, test plan creations, internal, integration testing and user acceptance testing. |
| Deployment | Deploying the latest built in the Verbat Test Server. |

### ESTIMATED DELIVERY TIME

The effort estimated for delivering the application will be as below:

* 00 UAE working days for the UI/UX from the date of approval of the SRS
* 00 UAE working days for the development of the application from the Date of Approval of the FS.
* The above-mentioned timeline is in UAE Working Days

| **Activity** |
| --- |
| Contract Signoff (T0) |
| Project Initiation & Initiating requirement gathering |
| Software Requirement Specification Document(SRS) |
| SRS Approval (T1) |
| System UI/UX-Complete |
| System UI/UX-Approval (T2) |
| Functional Specification (FS) |
| FS Approval (T3) |
| Development Phase-Complete |
| Perform QC (Unit Testing and Integration Testing) |
| System ready for UAT |
| UAT Acceptance on Verbat server (T4) |

* The initiation of the UI/UX development is dependent on the confirmation of SRS. SRS will be submitted post the confirmation of the project along with LPO, signed proposal and advance payment
* The above mentioned timeline for development is post the confirmation of FS
* Documentation submitted after project initiation and system study supersedes any proposal or documentation submitted during initial requirement gathering / discussion / negotiation
* Project plan will be submitted post the confirmation of project with necessary payments
* Any delay in getting the approvals of deliverables from client will cause change in timelines and the revised timelines will be updated in weekly status reports shared with client after the project commencement
* All approvals and queries regarding the client requirement and any queries which may hinder the project advancement at any stage should be answered by the client within 24 hours from the time of initiation, failing which the time delay will get added to the actual effort and timeline which was estimated.
* On project confirmation, Verbat requires a lead time of minimum seven (07) days for resource mobilization.

### DEPLOYMENT DETAILS (AT CLIENT’S BEHEST)

* Client can opt for hosting the application at Verbat’ Server.
* If deployment is at the client’s server, responsibility of deploying the application onto the production environment after conducting the necessary acceptance testing will lie with the client unless and until Verbat ’ support is contracted for deployment.

### RELEASE PLANNING

* Client will be informed about the release date and time through email.
* Client performs the UAT

### RISK CONTINGENCY PLANNING

Verbat has identified various risk factors associated with this assignment and understands the impact of these risk factors on the project schedules. The objective of this section is to highlight for both Verbat and client, the risk factors, to analyze the impact of the risks on project execution, and to propose strategies to control and reduce the impact of the risk factor. These various risks, which could arise during the project, are tabulated below along with mitigation implementation.

| Type of risk | Impact | Risk Mitigation | Risk Handling |
| --- | --- | --- | --- |
| Scope Creep | H | Functions and features will be detailed in system requirement documents and will go through client approval. Once this document is approved, any change to requirement will go through change management review for possible impact assessment. | Proper change management procedure will be implemented. |
| Delay in customer feedback | H | The plan is prepared with enough lead-time for customer reviews and approvals.  The customer is indicated with the dates when the document is expected after review and approval. | The request for feedback will be escalated if not attended at the right time so that the schedules are not affected. Deemed acceptance criterion is set up front and will be followed. |
| Non-availability of necessary software’s, frameworks, database instances and infrastructure at client’s hosting environment(If hosting support is provided by Verbat ) | M | Client will be informed in advance on these requirements. | Possible impact to schedule. |
| Manpower attrition | L | All efforts would be made to ensure process dependence rather than being person dependent. As a risk mitigation plan Verbat will train backups. | A new person will be identified as early as possible, provided the required project-specific training and mentored by the senior members of the team to minimise impact of attrition on the project. |

*H-High, M-Medium, L-Low, NA-Not Applicable*

## PROJECT ASSUMPTIONS

The project solution and technology is created from the initial understanding of the requirement shared with Verbat through mails and meetings. The proposed solution is based on the following assumptions:

### OBJECTIVE

* The requirement is to develop Smart Extension System with the functionalities as defined in ‘Functional Requirements’ section

### DESIGN

* Client to provide Verbat with the branding guidelines.
* Color theme shall be provided by the client
* Client shall provide licensed images and logos in specified size & format
* Client shall provide the text and associated images for the proposed application. Text should be provided in digital format preferably in MS Word 2013 or above
* Verbat may use template based design for the application

### DEVELOPMENT

* The proposed application front end and backend would be developed in English & Arabic
* Development Contingent upon timely feedback from client
* The client will finalize the functional requirements and UI/UX before the commencement of the development of the project
* Client shall approve the UI/UX for the web application before development work starts
* Final data needs to be entered by the client via the application
* Client will provide sample data to test the application
* Testing of web application will be done in latest versions of Google Chrome, Mozilla, Edge web browsers only
* Client will procure templates, SSL certificates (if applicable)
* Client will host and manage the application on infrastructure (server / cloud) recommended by Verbat for managing database and application backup inclusive of images
* Application and data backups are subject to the purchase of such services at an extra cost
* Internet connectivity is required for the functioning of the application
* The effort estimate may change after a detailed system study
* Customer shall provide procure workflow management software (K2 or ms Workflow Engine) for process automation
* While Verbat shall try to leverage open source components that can be installed on premise to manage costs, there could be software components that may have to be purchased to reduce delivery time
* Only functional and integration testing shall be considered in scope.
* Documentation and implementation details including configuration parameters for all third part integrations shall be provided by the client (GIS, Siebel, Emirates ID, Active directory, SMS, email)
* Responsive web application along with mobile apps targeted towards tablets shall be developed.
* Some pieces of the functionality esp. addressed towards Farmers that does not require large screens shall be developed as mobile phone apps
* Mobile devices shall be used to scan barcodes & QR codes. The efficiency of the scanner depends on the quality of the mobile device
* While Verbat can guarantee the efficacy and performance of the applications being developed, the client has a responsibility to use and operate suggested hardware components for the efficient performance of the applications being developed
* Mobile applications shall be developed using native mobile technologies (Android & IOS).
* Verbat suggests the development of the Customer Mobile App and Agriculture Directory App using PWA. (If it does not require the use of native functionality like camera, GPS etc.)

# **OUT OF SCOPE**

With the ever evolving digital market, the requirement should be clear to both the parties involved, hence the importance of mentioning the out of scope details of the project. Following are considered to be out of scope while creating this proposal:

* Purchase of images, fonts
* Any language other than English & Arabic
* Migration of existing data / Database migration
* Content writing / proof reading / Data Replication / Manual data entry
* Content or image procurement or uploading or editing
* Audit Trail
* End user testing and load testing
* Developer account creation and Maintenance (Play Store)
* Adding new features to the application other than mentioned in the functional specifications. Such requests will be handled via change management. *For Change management details, please refer section titled “Change Management” in the*
* Annual Maintenance Contract (Bug fixing, debugging, enhancements) – Please refer section titled “Maintenance and Support”, unless contracted for.(refer to section 4.2)
* Hosting Infrastructure and Maintenance (web and email hosting), unless contracted for.
* Application Deployment on the server and respective stores, unless contracted for.
* Backup solution and Disaster recovery unless contracted for.
* Physical deployment onsite / installation of the application in devices and Physical connection, installation of system.
* Integration with third-party, if any, other than mentioned in the functional specifications
* Hardware Integrations / procurement and purchase
* SSL Purchase and installation, if any
* Plugin/template purchases, if any
* OS other than mentioned in the Hardware Interface
* Relevant / related software libraries
* Security testing – vulnerability testing, penetration testing
* Configuration, development of Siebel systems
* Verbat shall not be developing the Control Management System

## CHANGE MANAGEMENT

Any addition which comes out of the project scope, upon and after the launch of the application will be considered as change management. Verbat recommends the following change management procedure for the same.

* Any change which comes out of the project scope, which was discussed, documented, and mutually approved by both the parties in the requirement stage, will be carried out only through raising a change request.
* Change request will be studied and an impact analysis on the existing work flow will be performed.
* On finalizing the impact, effort estimation for the change will be calculated and raised as additional requirement.
* Verbat will initiate the change request only after getting a formal approval from the client for the additional changes raised.
* Any change from the scope will be charged at AED 1,200.00 per man day effort and approval from the clients will be availed before commencing on any change management.



## MAINTENANCE & SUPPORT

* Maintenance contracts by default are supported as per the basic SLA terms.
* AMC with Basic SLA is charged at 25 % of the total project value. Additional Effort/change management request will be added towards Total Value of the Project to determine the AMC value.
* Maintenance support is limited to providing application support for ensuring the consistency of the look-and-feel, bug fixes and user issues i.e. maintenance and support of the existing features of the application.
* Support does not in any way cover providing technical or other support to the end users. The maintenance agreement does not include functionality changes or feature additions which are handled as change requests which will be charged AED 1,200.00 per man day. AMC does not include server support, maintenance and application deployment.
* AMC charges will cover Off-Site Support and Debugging. Support includes E-mail, Telephone and Chat unless explicitly specified. In the event, the application is hosted with the client; necessary remote desktop connectivity should beprovided for carrying out maintenance activity.
* Gap in AMC - In case if the client does not opt an AMC for a year and want to renew it after that period, 50% of the AMC amount for the year for which AMC is not taken will also be payable if the client wishes to renew the AMC contract.

*Note:*

* *Please note that the AMC support shall start only after all the necessary sign-offs (AMC Document) to this effect have been given.*
* *It is not mandatory that the client should opt for an AMC (replace with perhaps: It is mandatory that the client opts for an AMC). The client will still be supported on an ad-hoc basis on an agreed man-day rate.*
* *AMC Payment Terms: 100% to be paid as advance.*

## SERVICE LEVEL AGREEMENT (SLA)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SLA Type** | **Max Response Time** | | **Max Resolution Time** | **Target** |
| Basic | 1  working day | 3 working days | | Request / incident / problem tickets |
| Advanced | 5 Business Hours | 12 Business Hours | | Request / incident / problem tickets |
| Priority | 3 Business Hours | 5 Business Hours | | Request / incident / problem tickets |

*Note:*

* *We provide Basic SLA as standard with AMC while Advanced and Priority SLAs attract additional charges.*
* *Time zone applicable (8:00 am to 5.00 pm, Sunday to Thursday)*

AMC Option:

Client can opt for time and material based Annual Maintenance, the details of which will be shared post the completion of project.

# **TERMS & CONDITIONS**

## ACCEPTANCE CRITERIA

* UAT (User Acceptance Test) sign off should happen within 07 Days from the first release of the application and the acceptance confirmation needs to be mailed to Verbat failing which Verbat will consider the project as approved by the client.
* Any comments or reason for rejection need to be documented and the same needs to be sent as an email from the official mail id of client to Verbat on or before 07 days from the first release.
* Timeframe for acceptance for any further release will be mutually agreed and finalized between client and Verbat depending on the UAT Comments

## WARRANTY

* Verbat shall provide a bug ﬁx warranty at no additional cost for 30 days from the date of acceptance of the project, for correction of any errors in the developed application that may be attributed to Verbat.
* However, this does not cover modifications by Client, or use of the application on an environment other than the proposed environment, or other circumstances outside Verbat’s reasonable control. In such a case Verbat reserves the right to charge for its services.
* All error corrections will be executed at Verbat India office. In the event of any need for on-site work, all expenses incurred for such trips will be payable to Verbat by Client.

## SOURCE CODE & INTELLECTUAL PROPERTY RIGHTS

* Upon completion of the Project and 100% completion of the payment, client will have access to the source code except for propriety codes, developer tools and third party applications etc.
* The solution offered will be the intellectual property of the client and will be made available to the client on an “unlimited license” basis.
* Modifications by third party/person: No person or organization, other than Verbat or any person authorized by Verbat in writing, has any permission to modify/change the software Solution to be eligible to get continued support from Verbat as per the support terms defined under this document.
* Liabilities/Damages: Verbat accepts no liability or damages of any kind arising out of use or non-use of the software delivered. The responsibility of testing of software lies with Client.

## GENERAL TERMS AND CONDITIONS

* Offer Valid for 30 calendar days from the date of submission of the Proposal.
* An average of 20 working days are assumed in a month.
* All the projects activities will be carried out from our off-shore development center in India
* All the documentation will be provided in English.
* Third party components may be used to develop this application.
* The scope of the project is to develop the Application as detailed in the scope of the project and mentioned in this proposal. Any changes or additions will have to go through change management.
* This proposal would have been derived or concluded from either the RFQ /RFP/data shared via email / information transferred during an initial requirement analysis meeting / tele-conversation. Verbat reserves the right to change the terms of this proposal as the final terms (including the costing), features & functionalities and timeline could change during the course of the project. Hence any fees quoted / timeline committed in this proposal may not be considered as final unless agreed and signed by both parties.
* Web Application will be best viewed only in the environment mentioned in the section Browser Compatibility
* All Source Codes and other project artefacts would adhere to the Verbat document templates and internal coding standards.
* The documents delivered to the client includes the ones mentioned under ‘Deliverables’ and these will adhere to Verbat’s internal document standards.
* Acceptance criteria shall be based on the clauses which were mutually discussed between Verbat and client at the Requirement Analysis phase and the same will be documented and approved by both parties through official emails
* In case Client requires any extension of the proposed acceptance schedule, the associated effort and cost of such extension can be mutually reviewed.
* For any circumstances if project needs to be put on Hold / Stop it requires minimum request notice period of 1 week along with duration for which request will be addressed by management and final decision on the request will be based on that
* If deployment is done in client’s server, Verbat cannot be held responsible for any performance issues arising due to hardware malfunctions.
* Client is responsible for data backup in case the application is not hosted on Verbat server.
* Source code will only be delivered or uploaded on the Production Server once the due payments are made.

## GENERAL ADMINISTRATIVE, TECHNICAL & FUNCTIONAL ASSUMPTIONS

* Detailed system study is required before the start of the project.
* During the requirement gathering phase, authorized personnel from the Client’s side is expected to be available for discussion and finalizing the HLD (High Level Design), before development commences.
* Type of reports and formats, if under the scope of the project, needs to be specified by Client before project sign off.
* Workflows if under the scope of the project, need to be specified/ confirmed by client before project signoff.
* Verbat assumes that all sign-offs from Client will be provided within agreed and specified timeframe.
* Client will provide all the necessary contents, both text and image, before starting the project in the format suggested by Verbat (if any).
* The client should provide the relevant information and data well in time for the execution of a related activity. Non- availability of this information or data may lead to an interruption of work which may result in a delay in delivery as well as additional costs to the client.
* Client should have/possess server with technical specifications as suggested by Verbat for the proposed application.
* Client will be provided with one time training (train the trainer) on how to use the application via video conference (maximum of 4 hours). Additional training requests will be charged.

# **FINANCIALS**

## WEB AND MOBILE APPLICATION DEVELOPMENT

|  |  |  |
| --- | --- | --- |
| **No** | **Description** | **Amount (AED)** |
| 01. | Development of:   * Web Application |  |
|  | **Total Project Cost** |  |

*Note:*

* *The above cost is exclusive of VAT applicable in UAE*
* *The above cost is based on the initial understanding of the requirement grounded on the details shared by client. Any further changes in the scope or complexity if encountered during detailed system study/ analysis will call in for additional effort and time.*
* *The above cost does not include Application hosting, integration with any other third-party systems, deployment unless explicitly mentioned in this proposal.*
* *For feature additions, please refer section titled “Change Management “.*
* *LPO to be raised in the name of “Verbanet Technologies LLC” for project initiation*
* *Refer section 7.3 for ‘Mode of Payment’.*

### PAYMENT TERMS

* 30% () of total project value to be paid as advance along with the Purchase Order
* 40% () of total project value to be paid on confirmation of the UI/UX
* 30% () of the total project value to be paid on completion of Development and UAT on Verbat test server

*Note:*

*Payment should be made within 7 days from the date of invoice.*

## WINDOWS DEDICATED HOSTING – OPTIONAL

ITEM NO. DECSRIPTION AMOUNT (AED)

1. Windows Dedicated Hosting

TOTAL PROJECT COST

*Note:*

* *The above cost is exclusive of VAT applicable in UAE*
* *Refer “Windows Dedicated Hosting Proposal” for detailed Server specifications.*
* *Refer section 7.3 for ‘Mode of Payment’.*
* *LPO to be raised in the name of “Verbanet Technologies LLC” for project initiation*

### PAYMENT TERMS

* 100% advance payment along with Purchase Order to initiate Server purchase

*Note:*

*Payment should be made within 7 days from the date of invoice.*

### MODE OF PAYMENT

By Cheque to Verbanet Technologies LLC

OR

Wire transfer to our bank account

Bank Name : Emirates NBD

Account Name : Verbanet Technologies LLC

Account Number : 1011492858201

IBAN Number : AE61 0260 0010 1149 2858 201

Swift Code : EBILAEAD

Bank Address : Mamzar Branch, Dubai

*Note:*

* *Bank charges incurred during wire transfer to be borne by the client.*
* *Any local taxes / VAT applicable to be borne by the client*
* *Client invoices will include VAT charges in addition to the application cost*

# **CLIENT REFERENCES**

Education

Transportation

**Client Name – Ministry of Education (MOE)**

Organization Name:

Nature of work performed:

Contact person Name:

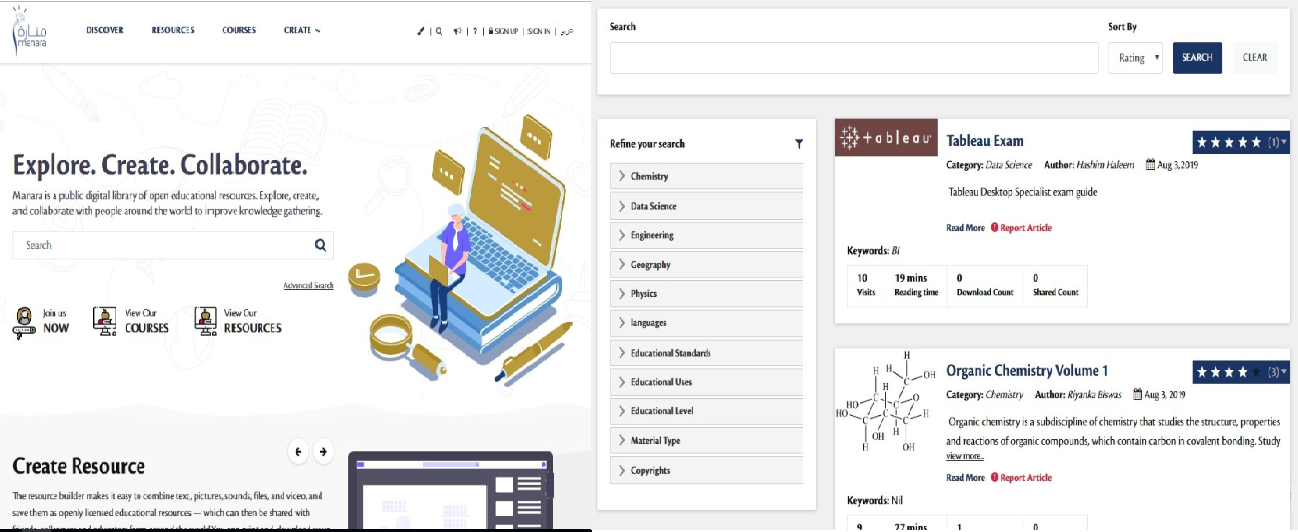
Telephone Number:

E-mail address:

Project Name: Open Educational Resource Platform (OERP)

Location: Dubai, U.A.E

Ministry of Education has requested Verbat to develop a UAE- Open educational resource platform (OERP). The aim of this platform is to provide a centralized online platform where UAE and others can view, share and contribute their contents. Furthermore, this portal will allow UAE-MOE to track and monitor the progress through a dashboard. All information related to OER such as issue date, source, current state, future state, release dates along with best practices shall be captured.

****

**Client Name – Sharjah Commerce and Tourism Development Authority (Government of Sharjah)**

Organization Name:

Nature of work performed:

Contact person Name:

Telephone Number:

E-mail address:

Project Name: Permit Issuance and Inspection System

Contract Type: Fixed Bid

Location: Sharjah, U.A.E

Established in 1996, the Sharjah Commerce and Tourism Development Authority (SCTDA) is tasked with promoting commercial and tourism activities in the emirate of Sharjah. Sharjah intends to provide a sustainable tourism product with a unique and distinct tourism experience in the desert areas of the emirate. This is geared towards attracting the interest of various tourism companies, specifically tour operators, to focus on Sharjah when organizing desert trips and desert adventures activities within these areas. Consequently, this would be beneficial to the tourism sector and will contribute further to Sharjah’s economy. Hence, the Sharjah government has decided to organize desert tourism activities through this project; the issuance of permits to all tour vehicles entering the desert areas of Sharjah for desert safari activities owned or operated by tour operators along with the day to day inspection tasks carried by inspectors who can issue fines and attach evidences for further actions.

Sharjah Tourism resource deployment model comprises of Offsite resource (Verbat Resource) and Onsite Project Manager (from client’s side)

**Client Name – MBC**

Organization Name:

Nature of work performed:

Contact person Name:

Telephone Number:

E-mail address:

Project Name: Security Inspection System

Contract Type: Fixed Bid

Location: Dubai, U.A.E

Smart Security System facilitates a sophisticated and structured approach to execute the daily security checklist to be used by the security patrol users. In addition to the ability of recording concern/issues as well to be viewed at any time as reports.  The application includes different users like Super Admin, Branch Admin, Inspector, Resolver and Viewer. The Inspector user reports patrol issues and concern issues using android mobile application. Branch admin assign the patrol issues to the resolver. Viewer will be able to see the issues and concerns related to the particular branch.

**Client Name – Carrefour Hybrid Project**

Organization Name:

Nature of work performed:

Contact person Name:

Telephone Number:

E-mail address:

Project Name: Software Quality Assurance Managed Services

Contract Type: Time & Material

Resource Deployment Model: Hybrid (Onsite + Offsite)

Founded in 1992, Majid Al Futtaim is the leading shopping mall, retail and leisure pioneer across the Middle East and North Africa (MENA).

A remarkable business success story, Majid Al Futtaim started from one man’s vision to transform the face of shopping, entertainment and leisure to ‘create great moments for everyone, every day’. It has since grown into one of the United Arab Emirates’ most respected and successful businesses spanning 13 international markets, employing over 27,000 people, and achieving the highest credit rating (BBB) among privately-held corporates in the Middle East.

Carrefour testing team comprised of 20 resources inclusive of Onsite Project Manager, Onsite Test lead and Offsite Test Engineers

**Client Name – Ministry of Foreign Affairs**

Organization Name:

Nature of work performed:

Contact person Name:

Telephone Number:

E-mail address:

Project Name: VISA Scheduling System

Contract Type: Fixed Bid

Location: Dubai, U.A.E

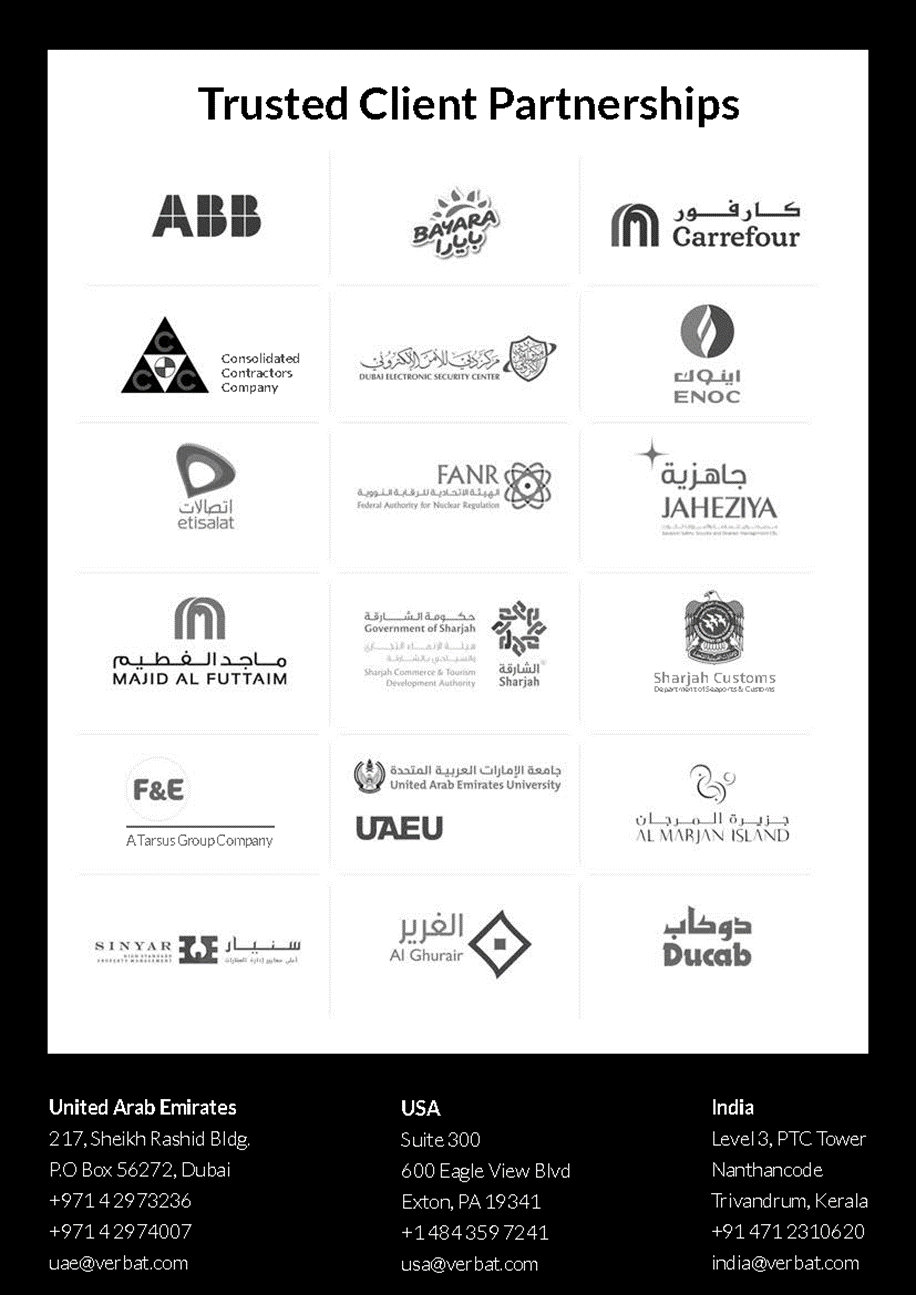
A web based application for the visa applicants and respected sponsors to schedule appointment for the security verifications. The system allows online payment facility. The application features include option for the sponsor to schedule appointments, option for the super admin to manage country and sites, manage other admin users and set e-mail/SMS notifications

# **ABOUT US**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Verbat Technologies | | 2017 | 2018 | 2019 |
| Number of Employees | UAE |  |  |  |
| Middle East |  |  |  |
| Globally |  |  |  |
| Number of relevant jobs | UAE |  |  |  |
| Middle East |  |  |  |
| Globally |  |  |  |
| Company Revenues | UAE |  |  |  |
| Middle East |  |  |  |
| Globally |  |  |  |
| Relevant Project Revenues | UAE |  |  |  |
| Middle East |  |  |  |
| Globally |  |  |  |





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