**Islamic Republic of Afghanistan**

Ministry of
**Communication & Information Technology**
Islamic Republic of Afghanistan

افغــان پُــست
**AFGHAN POST**

**TERMS OF REFERENCE**

**FOR**

# Afghan Post Management Information Systems

**Reference No: MCIT/98/NCB/CS-07**

*Contract Type: Lump Sum*

*Budget Code: 340112*

*April 4, 2019*

# Overview

Afghan Post management information systems consist of four components. Each component requirements are different from each other but inter-related tasks. As these systems will automate the manual process of Afghan Post there for each component should easily integrate with the next system task flow and information exchange. Post Ecommerce system will cover the online shopping however for the logistic and shipment the Logistic system should operate next level. Here are the project components as follows:

1. Afghan Post Ecommerce Platform(APEC)-Component (1)
2. Afghan Post Logistic Management Information System(LMIS)-Component (2)
3. Afghan Post Management Information System(PMIS)-Component (3)
4. Afghan Post Mobile Application-Component (4)

# Contents

**APEC**

# LMIS

# PMIS

## Mobile Application

**TERMS OF REFERENCE**

**FOR**

**COMPONENT (1)**

# Afghan Post E-Commerce Platform(APEC)

## 1.0    Background

Afghan Post is a government entity under the Ministry of Communications and IT. It provides with the customers traditional postal services as well as new ones. For smooth running of postal services at int'l level, it has already gained the membership of UPU (Universal Postal union), EMS Cooperative and APPU (Asian Pacific Postal Union). At domestic level, it provides postal services through 463 post offices and at int'l level through 25 int'l transit hubs. These transit hubs connect Afghan Post with all UPU member countries. It has totally 1115 personnel out of which 582 are contractual one. For more information, please go to Afghan Post official website: www.afghanpost.gov.af.

### 1.1 Introduction

Electronic commerce, or e-commerce as it is more commonly known, is the buying and selling of goods or services between C to C, B to B, G to G, or C to B over computer networks. Afghan Post e-commerce (APE-C) web application is intended to provide complete solutions for vendors as well as customers through a single gateway using the internet as the sole medium. It will enable vendors to setup online shopping for many types of product (edible products, electronic devices, raw materials, handicrafts or etc.) and the customers need to browse through the shops or business centers' websites and purchase their required products online without having to visit the shop physically from all around the world. The customers can also go to shops or business centers' websites through Afghan Post website which has already been linked with these centers. The administration module will enable a Platform administrator to approve and reject requests for new shops and maintain various lists of shop category.

UPU solutions for launching e-commerce:

| E-commerce business model | Description |
|---|---|
| Business-to-business (B2B) | Companies doing business with companies |
| Business-to-consumer (B2C) | Companies selling merchandise and services to consumers |
| Business-to-employee (B2E) | Companies selling merchandise and services to employees |
| Consumer-to-consumer (C2C) | Individuals selling merchandise and services to individuals |
| Business-to-government (B2G) | Companies offering services to government, such as in the case of public e-procurement |
| Government-to-business (G2B) | Governments offering services to businesses |
| Government-to-citizen (G2C) | Governments offering services to citizens |
| Government-to-government (G2G) | Government institutions offering services to other government institutions |

The APE-C Platform will be a bridge between the seller and the buyer. It will pave the ground for selling of Afghan pure products; an associated delivery window from Afghanistan to world. The Platform accepts the customer's submission of a purchase order for the item in response to a time of submission being before the order cut off time. Afghan Post e-commerce platform answers different e-commerce models such as Business-to-customer (B2C), customer to customer, or business-to-business (B2B). In B2B model transactions should be handle complex wholesales right out of the box. Customer should be able to login and see a custom catalog with products and pricing .The system should follow Amazon model of online business and structure based on customization of Afghanistan Post. The customer should have quick access to their order history and place reorders. It should have a resource library where customers get access to products training videos merchandising and guideline (B2B). In B2C model the goal is to allow the customer to shop virtually using the Internet, buy the items from the online store. The e-commerce B2C model application will be accessible through browser and a mobile application.

Customers can buy their desired item from the web application or mobile application at will be store on an RDBMS at the server side (store). The Server process the customers and the items are shipped to the address submitted by them. The application should be designed into two modules first is for the customers who wish to buy the items. Second is for the storekeepers who maintains and updates the information pertaining to the item of customers. The end user of this product is a departmental store where the application is hosted on the web and the administrator maintains the database. The application which is deployed at the customer database, the details of the items are brought forward from the database for the customer view based on the selection through the menu and the database of all the products are updated at the end of each transaction. Once the authorized personnel feed the relevant data into the Platform, several reports could be generated as per the security.

The aim of this document is to gather and analyze and give an in-depth insight of the complete APE-C Platform.

| UPU solution | Description | Role for e-commerce | Available since |
|---|---|---|---|
| .POST | Sponsored by the Universal Postal Union, the sponsored Top-level Domain (sTLD) ".POST" is the first Internet space governed by a UN organization: a secure, trusted and integrated digital postal network, defining the postal sector in the digital economy, regulated by UPU for the Postal community and its users, only trusted participants (accredited by member countries and/or the UPU), worldwide platform for digital communi-cation and commerce supported by the postal sector in each country. A digital single postal market .POST provides a secure online framework to enhance confidence of internet users of postal services | Specifics for eCommerce: Secure DNS hosting for all Posts Cloud solutions for e-commerce shops Promote secure e-commerce inclusion in underserved regions; Facilitate secure cross-border interoperability; Integrate eCommerce services with secure e-communications between member countries PostID – framework for linking electronic identifications across borders; verification of vendor's and buyer's certificates as a Trustmark for international services | 2012 |
| IPS | International Postal System: Full-blown Int'l mail management system based on UPU standards. For all mail classes. Preparation of shipments Flight Route management EDI generation and sending Scanning and Track & Trace Int'l Accounting Reporting Interfaces with other systems | Specifics for eCommerce CARDIT message to airlines including the electronic Consign-ment Security Declaration (eCSD) treatment of ECOMPRO products treatment of eCIP products Treatment for Merchandise returns Accounting for all | 1996 |

APE-C Platform are provided in this document.

| UPU solution | Description | Role for e-commerce | Available since |
|---|---|---|---|
| POST*Net | EDI network fully owned and managed by UPU/PTC transmitting all UPU Standard EDI messages between participants of the Postal supply chain.<br><br>Processing of 99% below 5 minutes<br><br>interruption-free & load-balanced<br><br>Value-added service<br><br>operational real-time dashboard (configurable) including content-based analysis<br><br>monitoring/alerting<br><br>reporting consolidated info<br><br>repair/backup service of missent EDI<br><br>bridge with GXS network = network routing is totally transparent for the user | detect immediately EDI problems which would lead to financial penalties (non-respect of EDI transmission rules)<br><br>traffic reporting by partner/period | 1996 |
| QCS | Quality Control System:<br><br>operational monitoring of volumes, performances, quality KPIs<br><br>UPU Parcel Report<br><br>EMS/Letter/Parcel performance reports<br><br>Dispatch Series reports<br><br>various other reports, incl. free reporting tool (operator creates own reports | Data Warehouse to analyze traffic & performance with partners and to monitor EDI operations (with drill-down) | 1996 |
| CDS | Customs Declaration System:<br><br>For capturing, creating, transmitting, receiving electronic customs declarations and exchanging them with customs / security authorities.<br><br>supports ITMATT, CUSITM, CUSRSP messages<br><br>interfaces with other systems<br><br>security alerts and referrals<br><br>Large Customs functionality<br><br>Risk management rule engine<br><br>Tax/duty calculation rule engine & Tax invoice generation<br><br>integrated Prohibitions & Restrictions check<br><br>Address lookup & verification<br><br>HS customs code lookup & suggestion<br><br>Landed Cost calculator | Specific for eCommerce:<br><br>provides the electronic pre-advice functionality requested by customs & security<br><br>including export watchdog for alerts & Prohibited/restricted goods<br><br>including Customs Tariff code (HS) lookup<br><br>including Address validation<br><br>*including a Landed Cost calculator* | 2013 |

| UPU solution | Description | Role for e-commerce | Available since |
|---|---|---|---|
| **Global Track & Trace** | Web-frame to provide in Postal websites the Track & Trace for all barcoded UPU mail | can be made available to shippers/e-retailers/individual customers<br><br>can be integrated in shippers' websites | 2012 |
| **RAIS/ SCIS** | Registered Articles Inquiry System / Supply Chain Inquiry System<br><br>Inquiries for barcoded Letter Post products.<br><br>integrated with IPS<br><br>can also be used for other Inquiry purposes<br><br>with other members of the supply chain<br><br>for other postal products than registered | can be used for small packet eCommerce deliveries. Also for non-barcoded dispatches<br><br>integration with IPS Accounting, mutual agreement between posts directly updates IPS<br><br>can be used for new e-commerce postal products<br><br>can be used to enhance electronic communication with other supply chain partners (e.g. airlines, retailers, etc.) | 2013 |
| **PIMS** | Postal Irregularities Management System:<br><br>Manages Irregularities (missent, damaged...) and produces eVNs (electronic Verification Notes)<br><br>integrated with IPS | can be used to clarify all irregularities<br><br>integration with IPS Accounting, directly updates IPS | 2015 |
| **IFS** | UPU's Money Transfer system for Postal Money Orders<br><br>international and domestic postal money orders<br><br>clearing & settlement between DOs<br><br>reporting / support for AML/CFT checks | can be used for eCommerce payments:<br><br>pay with Postal Money Order and reference purchase with ID in an IFS field | 2000 |
| **COMPAS** | *Variation of IFS specifically for eCommerce payments:*<br><br>*shipper/vendor injects invoice in COMPAS*<br><br>*Buyer's Post updates status when receives payment from buyer*<br><br>*status check possible anytime*<br><br>*mail acceptance event ("I") triggers payment to vendor*<br><br>*Integration with IPS:*<br><br>*check at export if payment is already lodged with destination post*<br><br>*trigger payment after event "I"* | *back-office central web-service*<br><br>*Web.API interface to link shippers' IT system to inject invoices*<br><br>*can be integrated with UPU Postal Payment Clearing System*<br><br>*Combined Track & Trace for delivery & payment status*<br><br>*the two posts function as "escrow" providers between vendor and buyer*<br><br>*COMPAS as back-office web service is destined for direct usage by parcel divisions* | |

| UPU solution | Description | Role for e-commerce | Available since |
|---|---|---|---|
| GLORYPOSE | The GLORYPOSE (Global Repository for Postal eShops) is designed as a tool to interconnect the offers of different national postal eShops:<br><br>MSMEs can offer merchandise in the national postal eShop<br><br>The descriptions of merchandise (incl. delivery and sales conditions) which is considered to be marketable in other countries may be uploaded to GLORYPOSE<br><br>All DOs can browse in GLORYPOSE for merchandise which may be interesting for their home market and download the information of selected merchandise<br><br>Both DO s then agree on the conditions of the offer in the other country.<br><br>To do that they might use a template agreement being part of GLORYPOSE<br><br>After agreement, the merchandise in GLORYPOSE is liberated for offer in country B | better access for MSMEs to the global market through postal e-shops<br><br>unique international variety of goods can be offered by posts | |

| Standard | Description |
|---|---|
| EMSEVT V3 | This new version of EMSEVT for postal items now contains elements that are important for e-commerce shipments, e.g. product options, better track and trace, and return options. |
| ITMATT | This message carries electronic customs declarations between postal operators. |
| CUSITM / CUSRSP | These messages carry electronic customs declarations from postal operators to Customs and the reply message from Customs to Posts. |
| S43 – Secure electronic postal services (SEPS) interface specification | This standard comprises two parts:<br>S43 Part A: Concepts, schemas and operations<br>This document specifies a standard XML interface that will enable software applications to connect to a secure electronic postal service provided by a postal operator. It also describes the functionality and edit rules of the actual technical specification arte facts, which are represented by an XML Schema (XSD) and an associated Web Services Definition Language (WSDL) specification.<br><br>S43 Part B: EPCM service<br>This document specifies a secure electronic postal service, referred to as the electronic postal certification mark (EPCM) service, which provides a chain of evidence, stored by an operator as a trusted third party, to prove the existence of an electronic event, for a certain content, at a certain date and time, and involving one or more identified parties.<br><br>EPCM is a technology that applies trusted time stamps issued by a postal authority to an electronic document, validates electronic signatures, and stores and archives all non-repudiation data needed to support a potential court challenge. |
|  | E-commerce–related documents could apply EPCM on:<br>– electronic orders<br>– receipts<br>– payment transactions<br>– other electronic messages between vendor and buyer<br>EPCM offers solid proof of legal status and non-repudiation on e-commerce transactions. |
| S52 – Functional specification for postal registered electronic mail | This standard defines the functional specification of a secure electronic postal service, referred to as the postal registered electronic mail or PREM service. PREM provides a trusted and certified electronic mail exchange between mailer, designated operator and addressee / mailee. In addition, evidence of corresponding events and operations within the scope of PREM will be generated and archived for future attestation.<br><br>The S52 standard is intended to foster standardization of registered mail services and to help the postal community move from its traditional physical markets to electronic services, given that Posts are well positioned to take advantage of those services.<br><br>In e-commerce, this standard provides safe e-mail communication between vendor, seller and other parties. |
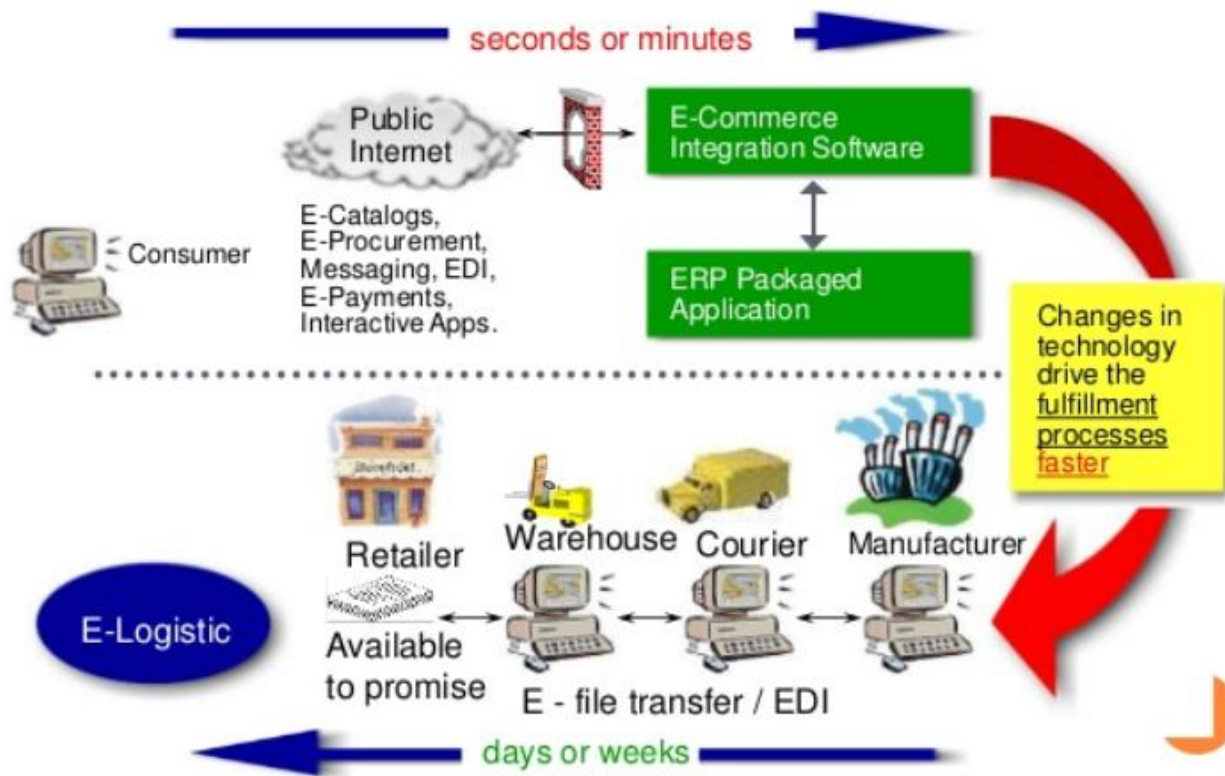
How E-commerce works:

### 2.0    Objectives of the assignment

- To collect requirement of Online Shopping
- To develop e-commerce platform both B2B C2C, and B2C model wither bringing the custom of online shopping in Afghanistan.
- To develop an e-commerce platform consists of the components and features such as
- To Design Prototype of System
- To develop an ecommerce platform consists of the components and features such as web application, Mobile application, stuck management (inventory management), warehouse management, customer relation management(CRM), content management system(CMS), payment management and any other e-commerce component requested in development stage.
- To functionalize the delivery of services to customers in an online base
- To provide trading of several goods and services over area of electronic
- Successful running of online payment for the products the electronic fund management, supply chain management internet marketing, online transaction processing, electronic data interchange (EDI) and automatic data management.
- To deploy complete e-commerce platform in National Data Center

The e-commerce key elements are shown in the following table:

| | | **Trade facilitation** | | | |
|---|---|---|---|---|---|
| | | Return of goods[2] | | | |
| | | Track and trace[2] | | | |
| | | Delivery[1,2] | **Big Data** | | |
| | | Customs[1,2] | E-commerce consulting[1] | | Order info[4] |
| **Mobile** | Payment on delivery (PYOD)[1,2] | Package pickup[4] | Sales[4] | Traditional media[4] | Customer info[2] |
| Product search and comparison[3] | Post office payment[2] | Shipping labels[2] | Marketing[1] | Web advertisement[4] | Product info[2] |
| Technical support[2] | E-payment[1,2] | Postage price calculator[3] | Customer data analysis[1] | E-mail marketing[4] | API[2] |
| E-shops[2] | Remuneration[2,3] | Warehouse and fulfilment[4] | Call centre[4] | Direct marketing[1] | Interconnectivity standards[2] |
| WEB HOSTING | PAYMENT | LOGISTICS | CRM | PROMOTION CHANNELS | DATA EXCHANGE |
| Secure Identification,[3] Secure Messaging,[2] Reliable Information,[2] Capacity Building,[1] Market Development,[1] Interconnectivity,[2] Standards,[1] Partnership,[1] Financing[1] | | | | | |
| E-commerce key elements | | | | | |

## 3.0    Scope of Services

APEC Infrastructure consists of both Hardware and Software components, specifies the corresponding service level requirements, and describes the management and operations of the whole system. It may comprise briefly of the following components at a very abstract level.
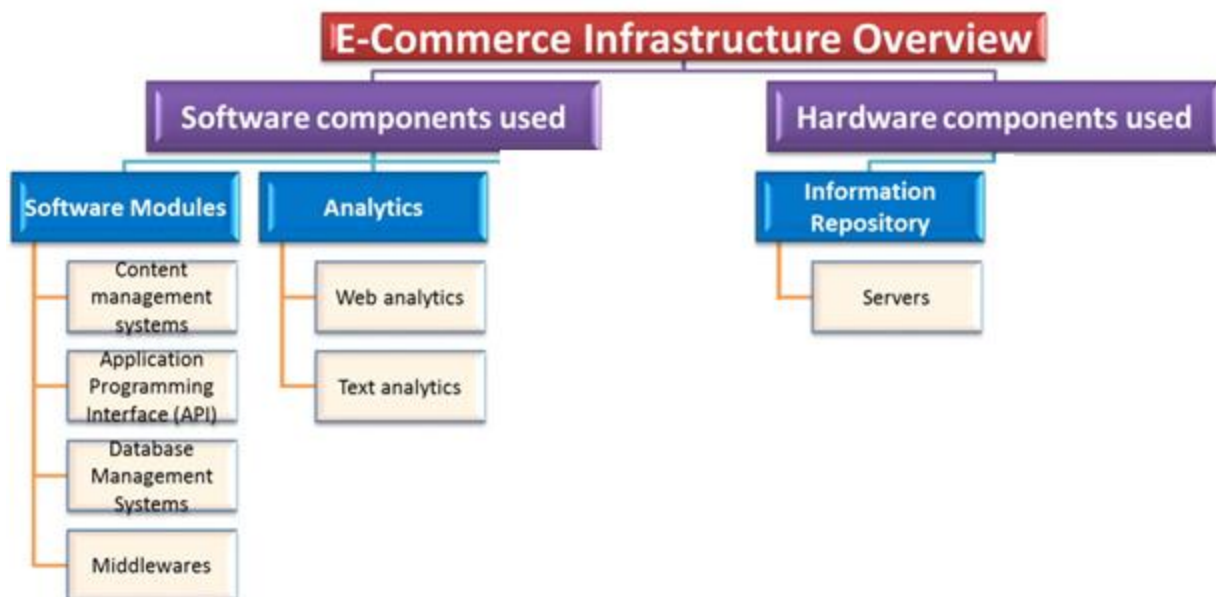
Software components: web application, Mobile application, stuck management (inventory management), warehouse management, customer relation management(CRM), content management system(CMS), payment, Web analytics, Text analytics, Application Programming Interface (API), Database server, Middleware management and any other e-commerce component requested in development stage. This system should easily have integrated with Afghan Post E-logistic system.

**Hosting** –The platform all component(APEC, LMIS,PMIS) will be hosted in-house national data center of Afghanistan in a single server and second server will be considered for backup within the following specification.

**Server**: (PowerEdge R940 2x Intel® Xeon® Gold 6138 2.0G,20C/40T,10.4GT/s 3UPI,27M Cache, Turbo, HT (125W) DDR4-2666, 24GB RAM, 1TB SSD HDD, 1G NICx4 core8 or higher,Windows Server 2016 Standard 64 bit or higher within license key provided by the company).

**Backup**: (Server: PowerEdge R940 2x Intel® Xeon® Gold 6138 2.0G,20C/40T,10.4GT/s 3UPI,27M Cache, Turbo, HT (125W) DDR4-2666, 24GB RAM, 1TB SSD HDD, 1G NICx4 core8 or higher,Windows Server 2016 Standard 64 bit or higher within license key provided by the company) .

**Anti- virus**: two packages Kaspersky anti-virus for two servers(Hosting and back-up) within license key for three years.

3.1 **Initial functional requirements will be: -**
The APEC platform should be able to easily integrate to any other system such third party application the bank payment getaway. As Afghanistan post intend to develop a logistics management system along with the current platform there for the mentioned system should be able to integrate. Since the ecommerce section will cover the shopping part however the logistic system covers the delivery part. As the application should be accessible through browser and mobile application. There for the requirements that are set for web application shall be applied to the mobile application. The mobile application shall be cross platform to operate on both android and iOS. The Mobile version of the APEC should follow Amazon online store concept in aspect of the design, functionality, performance and availability. A details documents shall be provided to upon request of software company in terms of mobile app design, structure and other features.

3.2 **Sell Configured to Ordered Products.**
The Web & Mobile Application: shall display all the products that can be configured, allow user to select the product to configure, display all the available components of the product to configure, enable user to add one or more component to the configuration. Notify the user about any conflict in the current configuration and finally allow user to update the configuration to resolve conflict in the current configuration and allow user to confirm the completion of current configuration.

3.3 **Provide comprehensive product details**
The Web & Mobile Application shall display detailed information of the selected products and provide browsing options to see product details. E.g. When a customer point to an item similar items should be listed and compared so the customer can decide to buy which product

### 3.4 Detailed product Categorizations

The Web & Mobile Application shall display detailed product categorization to the user.e.g. books category, cloths category, dry fruits category, Afghan traditional products category and so on

### 3.5 Provide Search facility

The Web & Mobile Application shall enable user to enter the search text on the screen, enable user to select multiple options on the screen to search, display all the matching products based on the search display only 10 matching result on the current screen, enable user to navigate between the search results and notify the user when no matching product is found on the search.

### 3.6 Maintain customer profile

The Web & Mobile Application shall allow user to create profile and set his credential, authenticate user credentials to view the profile and allow user to update the profile information.

### 3.7 Provide personalized profile

The Web & Mobile Application shall display both the active and completed order history in the customer profile, allow user to select the order from the order history, display the detailed information about the selected order, display the most frequently searched items by the user in the profile and allow user to register for newsletters and surveys in the profile.

### 3.8 Provide Customer Support

The Web & Mobile Application shall provide online help, FAQ's customer support, and sitemap options for customer support, allow user to select the support type he wants, to enter the customer and product information for the support, display the customer support contact numbers on the screen, allow user to enter the contact number for support personnel to call, shall display the online help upon request and shall display the FAQ's upon request. Shop employees are responsible for internal affairs like processing orders, assure home delivery, getting customer's delivery-time feedback, updating order's status and answering client's queries online.

### 3.9 Email confirmation

The Web & Mobile Application shall maintain customer email information as a required part of customer profile and send an order confirmation to the user through email.

### 3.10 Detailed invoice for customer

The Web & Mobile Application shall display detailed invoice for current order once it is confirmed and optionally allow user to print the invoice.

### 3.11 Provide shopping cart facility

The Web & Mobile Application shall provide shopping cart during online purchase. The Platform should provide creating a Shopping cart so that customers can shop 'n' no. of items and checkout finally with the entire shopping carts. Customers can add or delete items in the cart. TheWeb & Mobile Application shall allow user to add/remove products in the shopping cart.

### 3.12 Provide multiple shipping methods

The Web & Mobile Application shall display different shipping options provided by shipping department, enable user to select the shipping method during payment process, display the shipping charges and tentative duration for shipping.

### 3.13 Online tracking of shipments

The Web & Mobile Application shall allow user to enter the order information for tracking and display the current tracking information about the order.

### 3.14 Provide online Tax Calculations

The Web & Mobile Application shall calculate tax according to standard tax Web & Mobile Application for online shopping or follow Afghanistan law as defined.

### 3.15 Allow multiple payment methods

The Web & Mobile Application shall display available payment methods for payment and allow user to select the payment method for order. The normal shopping method is through Visa or MasterCard but APEC platform should support cash based payment as well. The concept of the cash payment will be after home delivery. This function will be consulted with the software company if details requested. And other options such Mobile Money will should be added in coordination with Afghan Post.

### 3.16 Allow online change or cancellation of order

The Web & Mobile Application: shall display the orders that are eligible to change, shall allow user to select the order to be changed, hall allow user to cancel the order, shall allow user to change shipping, payment method and shall notify the user about any changes made to the order.

### 3.17 Allow Online Product reviews and ratings

The Web & Mobile Application shall display the reviews and ratings of each product, when it is selected and shall enable the user to enter their reviews and ratings.

### 3.18 Offer financing options

The Web & Mobile Application shall display all the available financing options, shall allow user to select the financing option and notify the use about the financing request.

### 3.19 Provide detailed sitemap

The Web & Mobile Application shall allow user to view detailed sitemap.

### 3.20 Offer online promotions and rewards

The Web & Mobile Application shall display all the available promotions to the user and allow user to select available promotion.

### 3.21 Online Purchase of products

The Web & Mobile Application shall allow user to confirm the purchase and enable user to enter the payment information.

### 3.22 Multi Language interface

The Web & Mobile Application shall available in three languages (Dari , Pashto and English)

### 3.23 Report and statics from sales monthly

The Web & Mobile Application shall generate report of the monthly sales, show list of the customers, benefits and other report for better decision making.

### 3.24 Feedback option

Feedback mechanism, so that customers can give feedback for the product or service which they have purchased. Also facility rating of individual products by relevant customers. Adequate payment mechanism and gateway for all popular credit cards, cheques and other relevant payment options, as available from time to time this will be decided later.

## 4. None-functional Requirement

### 4.1 Web/Mobile application User Interface

The Web & Mobile Application interface should follow coloring on the Post New Logo and content accordingly. The interface should have a decent look to interact customers and user

friendly. The Web & Mobile Application shall provide a uniform look and feel between all the web pages, provide a digital image for each product in the product catalog and use of icons and toolbars. For initial launch it is the responsibility of company to provide complete photography of items that will be displayed in the website. The company should customize the photography from Post warehouse items in different layout and provide initial data entry. At least 1000 items should be available in the stuck in first lunch of the platform. The platform should have capacity of handling 10,000 users in one time.

## Non-functional Requirements

| Product Requirements | Process Requirements | External Requirements |
|---|---|---|
| Usability requirements | Delivery requirements | Interoperability requirements |
| Portability requirements | Design requirements | Legislative requirements |
| Reliability requirements | Implementation requirements | Privacy requirements |
| Efficiency requirements | Standards requirements | Ethical requirements |

### 4.2 Cost

The cost for maintenance of servers, licenses and other hardware and software is responsible of the company. License cost and its renewal policy should be provided by company.

### 4.3 Accessibility

The application should provide easy accessibility from all around the world. Since the application is complete online, high SSL protection policy should be applied so that both website and customer's data are saved.

### 4.4 Reliability

This system should keep the database information's consistently. The application part of the system should never fail. In the database side, failures should be minimal and there should be crash recovery systems in order not to lose information in a potential database failure. System should display informative messages when it's components doesn't work properly.

### 4.5 Availability

The platform should be available 100% for the users and is used 24hrs a day and 365 days a year. The system shall be operational 24 hours a day and 7 day of a week. The application should be connected to the GPS device. System should be tested against probable failures before publishing the first version or updated versions of application. Published version should be error free. In database side, in case of a failure, system should recover any information for user and system.

### 4.6 Supportability

The application should be available in three languages. The prices should be shown in both Afghani and USD. When the customer changes the language all the content should be shown in accurate translation in Pashto and Dari languages. The application should support all browsers such (Chrome, Mozilla safari, explorer etc.)

### 4.7 Security

This application should be secured by latest and highest technology. The back-end server shall only be accessible to authenticated administrators. The application back-end databases shall be encrypted. All connection between the application and sub-system, third party application (payment gateway) shall be end to end connection. The mobile version of the application size should not extend more than 5mb(megabyte). The customer request should be encrypted for log-in communications, so others cannot get user-name and password from those messages. The system must not request unnecessary permissions from the user in order to prevent unwanted attacks. Stored data of the application should not be reached by other applications that is installed in the user's mobile device. Stored data in the mobile device and sent data via internet should be encrypted with SSL. Send and receive of data should be transferred via HTTPS connection. And also authenticated and encrypted socket-level communication should be implemented. In the database side, SQL codes should not be stored in application in case of application can be affected by a malware software. Data that come from the application should encrypted again in the database side. The application can access camera and location of the user for finding the post locations and scanning the bar code from package.

### 4.8 Maintainability

Repair time should be no more than an hour. The application should be easy to extend. The code should be written in a way that it favours implementation of new functions. In order for future functions to be implemented easily to the application. A software should be used in development phase in order to reduce complexity, make the system traceable and recover the code from an unwanted crash while more than one developer is dealing with the code. Design elements should be documented well. All parts of the code should be easy to read.

### 4.9 Portability

The mobile version of the application should be developed in cross platform means that can implement in Android and iOS devices, all of the Android/iOS devices which meets the requirements can operate the application. The application will respond to the size of the screen and/or window the application is running in. The application should take less than 4 seconds when running on an Android/iOS phone and less than 8 second when on an emulator or tablet. The application will run fine until the user begins to multi-task between 3 or more processes. The application must support approximately 10,000 users at the time of launch based on the population of Afghanistan.

### 4.10 Search Engine Optimization

Website should be registered within google and other search engines for marketing and getting more customers. All possible and most used tags for online shopping should be used in order facilitate finding the website. For online shopping of Afghan products the website should be ranked as first in Google search.

## 5. Terms and Condition of System Maintenance

The company should provide maintenance services for one year after the system deployment. During this period if any error or system failure occur the company is responsible to solve the problem on the spot.

## 6. Liaison with Ministry of Communication and Information Technology/Afghanistan Central Post

The Consultant shall maintain close liaison with Post director. The Director of AP appointed by Ministry of communication and information technology for the sole purpose of the services. The Director of AP shall be the primary contact point of the ministry for the Consultant.

## 7. Additional Responsibilities of the Consultant

- In section 3 a details expectation from the platform and responsibility of the consultant are drafted. In addition to that the consultant is responsible to provide an initial requirement gathering survey before development stage
- Collect requirements, analysis, design, develop and implementation(Installation) of the system
- Development of a standard e-commerce platform within its component and features based on request of the Afghan Post as mentioned in this document
- The platform should capable of 10,000 users at one time
- Development mobile application applied in cross platform (Android & iOS)
- Providing Both software and hardware mentioned in section 3.2 Since the version of the devices are not specified however should be supportive of Windows server 2016.
- Purchasing of the devices mentioned section 3.2 within latest version as of 2018
- Complete data entry of 1000 items for initial launch
- Development of platform component such as stuck management (inventory management), warehouse management, client relation management(CRM), content management system(CMS), payment management, Database management system, Middleware management and any other e-commerce component requested
- Development of a responsive web application and mobile application
- Photography & edit of 1000 items photos and uploading them in the application within details (e.g. product name, price,size,color…)
- Provide both online and cash payment method for customers
- Development of single platform with multipurpose for both vendors and customers
- Providing payment options as per the request of Afghan post and the application should support both Afghani and USD currency
- The platform should be developed to support our languages
- Complete training of the platform in different stages, Afghan Post will provide training rooms for 100 employees for training entitled on how to use the platform.
- Complete Installation of the platform and hosting server with related component  in national data center of Afghanistan
- Purchase and Configuration/set-up of two servers for hosting the platform with specification of (Server: PowerEdge R940 2x Intel® Xeon® Gold 6138 2.0G,20C/40T,10.4GT/s 3UPI,27M Cache, Turbo, HT (125W) DDR4-2666, 24GB RAM, 1TB SSD HDD, 1G NICx4 core8 or higher,Windows Server 2016 Standard 64 bit or higher within license key provided by the company) .
- Afghan post(AP) will receive source codes, standard license of the B2B services, License for servers and relevant software and hardware along with complete platform devilry by end of project.
- Afghan Post will regularly monitor the project system development process till completion.
- Afghan Post should receive project progress report and update of development each component on weekly bases of system development.

- Apply any further functions & features if requested by Afghan Post that are not mentioned here, these features do not affect the project cost.
- Wither the company does not meet Afghan Post expectations, Afghan Post have the right to request for changes based on the requirements and specification as needed by Post.

## 8. Obligation, Duties and Responsibilities of the entity

The Afghan Post is responsible for providing the flow of information for system development between the relevant stakeholders in the requirement gathering phase, software development phase, as well as in the Implementation phase. It will organize consultative meetings as needed to render the service.

## 9. Duration of the Services

The duration of the Services is to extend from the date of effectiveness of the Contract for a period of approximately 5 months after contract.

## 10. Equipment to be provided by the consultant

As detailed under Section 6.0 herein above, the Consultant should arrange all facilities required for the consultancy service to be provided by him and the cost of such provision should be detailed in the Consultant's financial proposal.

## 11. Deliverables and Reporting

The main deliveries for this projects includes:

- APEC platform software as one packages within complete setup and configuration
- Delivery of the system within the components in CD
- APEC platform complete setup and configuration
- APEC platform hardware (servers and devices).
- Delivery of Server: PowerEdge R940 2x Intel® Xeon® Gold 6138 2.0G,20C/40T,10.4GT/s 3UPI,27M Cache, Turbo, HT (125W) DDR4-2666, 24GB RAM, 1TB SSD HDD, 1G NICx4 core8 or higher, Windows Server 2016, standard version within license key provided by the company.
- Reports shall be generated after the completion of each phase, requirement gathering phase, development phase and implementation phase and share with Afghan Post.
- The inception and the interim reports shall be submitted electronically and as hard copies to the Director of Afghan Post.
- The final APEC platform within license and source code should delivery to Afghan Post.
- Complete platform hosting in national data center of Afghanistan and configuration and delivery to the entity
- Delivery of the software packages within licenses for further platform integration
- **Anti- virus**: two packages Kaspersky anti-virus for two servers(Hosting and back-up) within license key for three years.

## 12.    Inception Report

The one inception report, to be delivered within 1 month after the project starts; The inception report shall contain the necessary information for the Project Structure to evaluate the state of implementation of the project, the respect of the work plan, the financial situation of the project and whether the project is on track towards achieving its objectives, or whether there are serious delays and/or obstacles. The inception report should describe the conceptual framework planned for undertaking the evaluation. Identical copies of the inception report, in both paper and electronic versions, shall be simultaneously forwarded to Afghan Post Directory. The report shall normally contain a maximum of 20 pages, excluding annexes. Please use font Times New Roman 12 or equivalent for each System individually.

The report must contain a work plan which indicates the phases of the requirement gathering, design, prototyping, development and implementation the timing, key deliverables and milestones. As summary:

- Projects schedule/timeline
- Submission of requirement gathering documents(SRS)
- System Development document
- Software Design and architecture
- Submission of requirement analysis document
- Deploy first demo of the system
- Live system for Post technical team review

### 12.1     Initial launch and submission Interim Reports

The midterm report concludes initial launch of demo of platform. In this stage second enhanced demo of the both applications (web & mobile) should be come live.  The technical team of Post will observe the performance of the system and give feedback or request for changes if needed.

### 12.2     Presentations of the final products and delivery of hardware

The consultant should provide presentations of the project activity and development of the platform to Afghan Post employees as well delivery all the hardware and equipment to final system launch. This will help both parties to discuss and improve the system as per the need of entity as well test the system before actual implementation.

### 12.3     Approval of Final Report

This is the final platform delivery with complete software and hardware components. As the final part of the project the system should be completely ready for operation. As expected the system should be used by Post employees. All the license for the products should be submitted by the company to Afghan Post.

**TERMS OF REFERENCE**

**FOR**

# Logistic Management Information System(LMIS)
## COMPONENT (2)

# 1. Introduction

Logistics is a process of planning, implementing and controlling the efficient, cost-effective flow and storage of raw materials, in-process inventory, finished goods, and related information from point of origin to point of consumption for the purpose of conforming to customer requirements. As Afghan Post is moving towards modernization in order to bring efficiency and effectiveness at its services, to our work, there is an increased need for user-friendly tools and software packages to support the timely and accurate collection and reporting of logistics management information.

Postal logistics is a way of lowering postage costs, speeding delivery of packages and ensuring track of each mail/packages from source to destination for both outgoing and incoming mails. The benefit of the system is connected to the mail entry point from post office to destination and reverse in Afghanistan and outside. The LMIS consist of both Hardware and software and data that will prepare trays. System components are consisting of fully automated scan band, tray handling and sorting, electronic manifest reconciliation, automatic tray log-out, adjustable tolerance for weight reconciliation.

This information can be used for operational decision making, advocacy. Automation of a logistics management information system (LMIS) can greatly facilitate the work of relevant Afghan Post personnel, reducing human error in calculations; and by allowing for visibility of data up and down the supply chain. Reducing the time required for packages collection, transmission, and aggregation results in data being available more quickly for timely decisions and actions to help ensure products are available where and when needed.

Using LMIS should ensure quantity and quality of packages processing, routing using the most time-efficient transportation by utilizing advanced air & surface assignments. Using the system AP should be able to calculate number of incoming and outgoing packages within complete details, allow Post employees to track packages & receive notification from package delivery status inside and outside the country. This system should easily integrate within the Mobile tracking application of Post to ensure packages delivery for customers. LMIS should completely routs the packages in central, provincial and international level.

The overall objective of the system is to better alignment of Logistic services to customers and packages shipment and distribution with the technology. The shipment component of the LMIS are routing of shipments, collection, dispatch, transport, scanning tray labels, capture weight and interfaces with Air & surface Management System (Currier) for assignments, arrival and delivery of packages. The current postal logistic operation are carried out in three levels:

 The LMIS consist of both Hardware and software components.

The aim of this document is to gather and analyze and give an in-depth insight of the complete LMIS. The detailed requirements for LMIS are provided in this document.
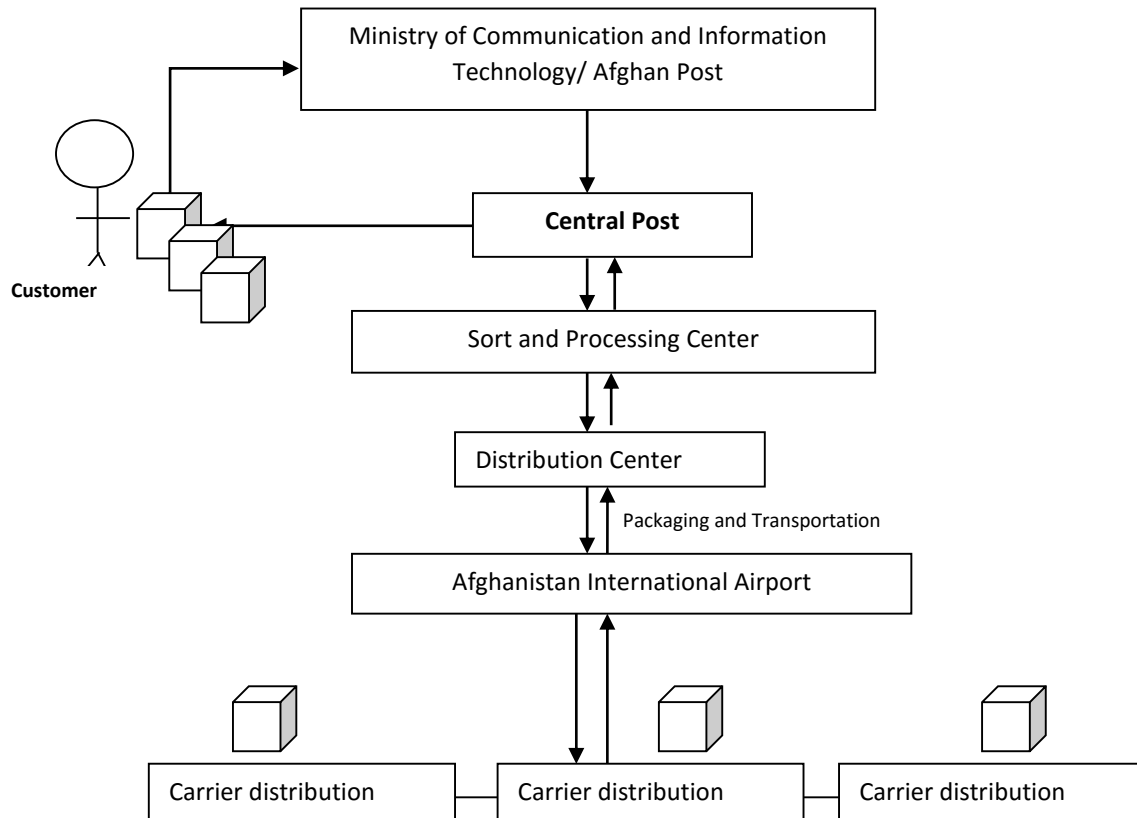
*Figure.1. Current parcel/mail processing flow in Local Post office Kabul*

During the transfer of shipments from the sender to the recipient, numerous logistics activities and processes are detected: transport, transfer, processing (sorting), preparation for shipment, as well as design of all supporting information flows. Logistics processes in the postal sector represent range of logistics management activities: informational, technological, organizational and controlling and all have their goals which are harmonized with the goals of postal service as a superior business system. The effect of logistics processes as a series of successive and parallel logistics activities is measured through logistics performance. The goal of performance measurement and control activities in the logistics is to monitor logistics performance versus operating plan and in that way identification of opportunities to improve the effectiveness and efficiency.
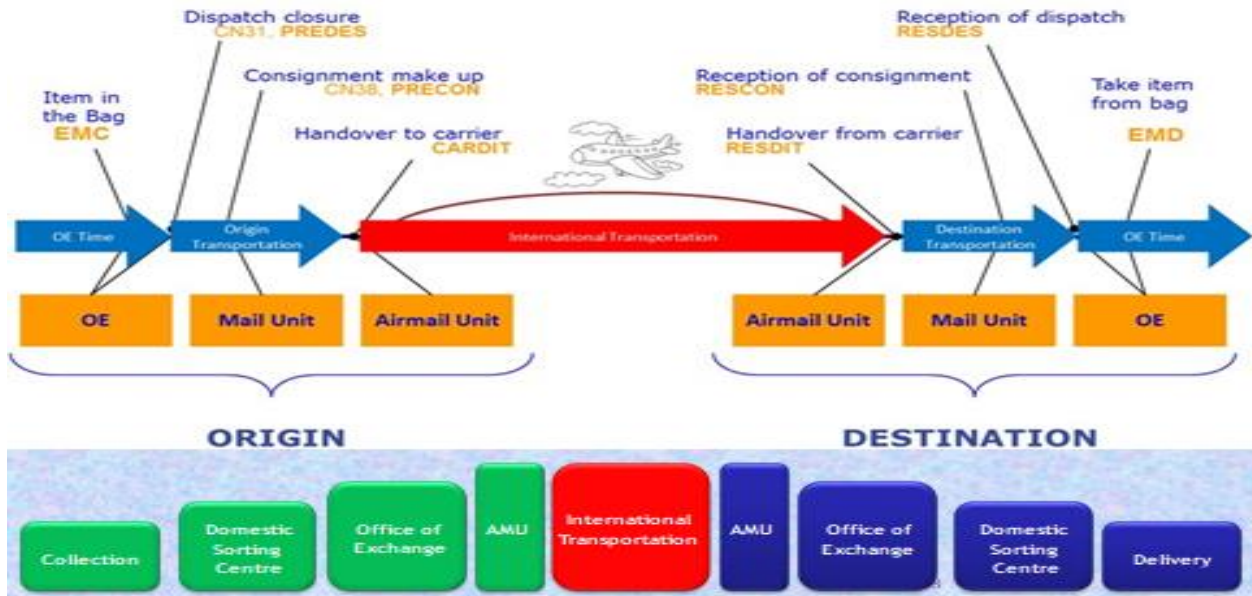
*Figure 2: EDI message exchange Int'l system*

Within the new e-logistic management system, Afghanistan post will be able to control and Logistic flow as follow:
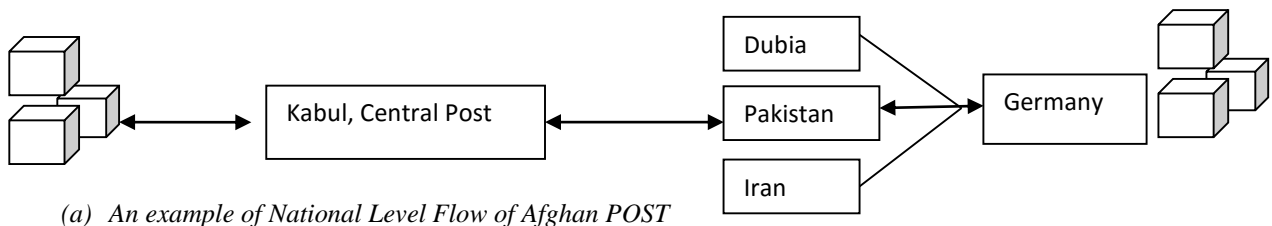


*(a)  An example of National Level Flow of Afghan POST*



*(b)  International Level Flow*

*Figure 3: Acceptance, sorting, air transportation, sorting and delivering of mail items Int'l system*

Software development and, more specifically, the automation of an LMIS can and should follow project management and information technology (IT) best practices. These documents are written for Afghanistan Post as a reference when considering starting an LMIS automation project, planning for one, and executing that plan. This document is developed for software developer to take decisions an automation of LMIS and help them to understand the steps required to develop a complete Logistic System to facilitate Management of Afghanistan Post transactions inside and outside the country.

The Afghanistan Post currently process the shipment of parcels/packages to/from the world, in addition within new online shopping system AP will be dealing within shipment of the items to the customers inside and outside Afghanistan. The LMIS should be developed in order to control

both shipments of packages from customers by visiting the post office and manage the items purchased online. The LMIS should be functionalized in manner of to control and manage these two shipments on time. In the LMIS functions should be allocated to control and monitor transportation and logistics servers to Post customers and AP online shopping system.

In order to ensure rigor is brought to the project management process, the automation process follows the software development life cycle (SDLC) methodology, a best practice approach toward articulating and constructing software solutions. For development LMIS the spiral model should be followed as the information and requirement is not complete there for there should be method of re-starting however with this model we can achieve it .Figure 4 shows one example of the software development lifecycle.

## 2.    Objectives of the assignment

- Collect requirement, design, develop, install and maintain for the LMIS
- To design LMIS components and prototype it
- To develop Logistic Management Information System for Afghanistan Postal Service for registration of incoming and outgoing packages in central, provincial and international packages level
- Networking of the system with postal offices inside, regional and province base
- Facilitation of Packages and Post vehicles routing in national and international level
- Integration of the LMIS with PEC(Post e-commerce) platform and Post tracking mobile application
- To provide an effective method collection and sorting of parcels, reliable delivery, effective and efficient transport.
- To implement hub location and vehicle routing model.
- Introduce a new way of distributing parcels by creating regional parcel centers hub through system and parcel posts involving the separation process of parcels for the local area and directing mail shipments to freight parcels on scheduled routes.
- To develop components and features of LMIS such as stuck management (inventory management), warehouse management, content management system(CMS), payment management and any other LMIS components requested by AP
- To monitor shipment status, count number of packages per day, shipped country/province, packages details(incoming & outgoing) and more
- Transportation and  delivery status monitoring of the packages
- Generating reports  and designing  of graphs to facilitate decision making  to show Stock/available parcel  on hand for delivery, available months of stock, and average monthly consumption

## 3.    Scope of Services

LMIS  Infrastructure consists of  both  Hardware  and  Software  components,  specifies  the corresponding service level requirements, and describes the management and operations of the whole system. It may comprise briefly of the following components at a very abstract level include but not limited to:

- **LMIS central post office** – Post personals can access to LMIS and Control & monitoring of  incoming/outgoing  packages,  packages  distribution,  collection,  vehicles  control,

currier status, schedule, transportation forecast, weather forecast from central post offices and other logistic operations.

- **LMIS regional post offices** – Post regional personals can access to LMIS and Control & monitoring of incoming/outgoing packages, packages distribution, collection, vehicles control, currier status, schedule, transportation forecast, weather forecast from central post offices and other logistic operations.
- **LMIS for Provincial post offices** - Post provincial personals can access to LMIS and Control & monitoring of incoming/outgoing packages, packages distribution, collection, vehicles control, currier status, schedule, transportation forecast, weather forecast from central post offices and other logistic operations

**Hosting** –The LMIS will be hosted in-house (national data center of Afghanistan) in server mentioned in first section.

4.      **Initial functional requirements will be:**

*LMIS should easily integrate to any other system such third party application the bank payment getaway and PEC system of Post. Details documents shall be provided upon request of Software Company in terms of system functionality app design, structure and other features.*
*LIMS main functions and features are as follows but not limited to:*

- Registration of outgoing and incoming packages such type, registration timing, delivery method, payment details, destination and other information provided later
- Registration of customers details into system e.g. name, package tag, destination tracking number etc.
- Registration of Post personals based on their login to the system
- Registration of vehicles and transportation delivering the packages and relevant staff involving the operation etc.
- Calculation of packages and assign schedule to the vehicles
- Display currier information such status, fly date and time
- Provide options for Customer and internal personnel Support.
- Delivery confirmation notification
- Detailed invoice for customer registering a package
- Automate addressing while package registration(as of now the customer have to write the address manually within the system customers can share the address with Post Personnel and entered to the system based on that system should generate automatic address label to be used on up-front of the package.
- Provide easily address management facility to the customers
- Generating tracking code where based on  that system notify from status of package both AP and customer can track using tracking mobile application of Post.
- Online tracking of shipments
- Allow multiple payment methods.( as current method is by cash but AP intent to implement mobile money system)
- Details map of each packages and all relevant information should be displayed into the system

- Generate reports and statics daily/weekly/monthly base from number of registers packages, revenue, packages arrived to AP, number of packages shipped by different currier and other types of reports as per need of AP
- Automatic price calculation of the packages based on the weight shown
- LMIS should be available in three languages (Dari, Pashto and English)
- These functions might be revised and more functionality will be requested by AP, the company should have agreement of any further features development requested by AP.

## 5.     None-functional Requirement

### 13.2     Web/Mobile application User Interface

The LMIS should follow a standard responsive design and coloring on based on Post Logo as well content accordingly. The interface should have a user-friendly look. Regard the number of components and users will be discussed on pre-bid meeting. The platform should have capacity of handling 1000 users in one time. There should be no dependency that user one data affect another. The system should have back-up functions and store information.

### 13.2   Cost

The cost for maintenance of servers, licenses and other hardware and software is responsible of the company. License cost and its renewal policy should be provided by company.

### 13.2   Accessibility

The application should provide easy accessibility from all around the world. Since the application is complete online, highest and latest security protection policy should be applied so that both website and customer's data are saved.

### 13.2   Reliability

This system should keep the database information's consistently. The application part of the system should never fail. In the database side, failures should be minimal and there should be crash recovery systems in order not to lose information in a potential database failure. System should display informative messages when it's components doesn't work properly.

### 13.2   Availability

The platform should be available 100% for the users and is used 24hrs a day and 365 days a year. The system shall be operational 24 hours a day and 7 day of a week. The application should be connected to the GPS device or post tablets or other tracking method concept provided by the company. System should be tested against probable failures before publishing the first version or updated versions of application. Published version should be error free. In database side, in case of a failure, system should recover any information for user and system.

### 13.2   Supportability

The application should be available in three languages. The prices should be shown in both Afghani and USD. When the customer changes the language all the content should be shown in accurate translation in Pashto and Dari languages. The application should support all browsers such (Chrome, Mozilla safari, explorer etc.)

### 13.2   Security

This application should be secured within the latest and highest technology. The back-end server shall only be accessible to authenticated administrators. The application back-end databases shall be encrypted. All connection between the application and sub-system, third party application (payment gateway) shall be end to end connection. Data that come from the application should encrypted again in the database side.

### 13.2 Maintainability

Repair time should be no more than an hour. The application should be easy to extend. The code should be written in a way that it favours implementation of new functions. In order for future functions to be implemented easily to the application. A SVN software should be used in development phase in order to reduce complexity, make the system traceable and recover the code from an unwanted crash while more than one developer is dealing with the code. Design elements should be documented well. All parts of the code should be easy to read.

### 13.2 Portability

The application will respond to the size of the screen and/or window the application is running in. The application should take less than 4 seconds when running on Windows. The application will run fine until the user begins to multi-task between 3 or more processes.

### 13.2 Integrity

LMIS should easily integrate with current e-commerce platform(PC), USPS surface-air management system, Post tracking application and other systems for getting the data or updates.

## 6. Terms and Condition of System Maintenance

The company should provide maintenance services for one year after the system deployment. During this period if any error or system failure occur the company is responsible to solve the problem on the spot.

## 7. Liaison with MCIT and Afghanistan Central Post

The Consultant shall maintain close liaison with Meena Momand Technical Development specialist in coordination with Post director. The Director of AP appointed by Ministry of communication and information technology for the sole purpose of the services. The Director of AP shall be the primary contact point of the ministry for the Consultant.

## 8. Additional Responsibilities of the Consultant

- In section 3 a details expectation from the platform and responsibility of the consultant are mentioned. In addition to that the consultant is responsible to provide an initial requirement gathering survey before development stage
- Collect requirements, analysis, design, develop and implementation(Installation) of the system
- Development of a standard LMIS within its component and features based on request of the AP as mentioned in this document
- Providing Both software and hardware mentioned in section 3.2 Since the version of the devices are not specified however should be supportive of Windows server 2016.
- Purchasing of the devices mentioned section 3.2 within latest version as of 2018
- Development of system component such as stuck management (inventory management), warehouse management, client relation management(CRM), content management system(CMS), payment management, Database management system, Middleware management and any other component required
- The LMIS should be made in Dari, Pashto and English languages
- Complete training LMIS different stages entitled on how to use the LMIS.
- Complete Installation of the LMIS and hosting server with related component in national data center of Afghanistan

- AP will receive source codes, licenses for servers and relevant software and hardware along with complete platform devilry by end of project.
- AP will regularly monitor the project system development process till completion.
- AP should receive project progress report and update of development each component on weekly bases of system development.
- Apply any further functions & features if requested by AP that are not mentioned here, these features do not affect the project cost.
- Wither the company does not meet AP expectations, AP have the right to request for changes based on the requirements and specification as needed by Post.

## 9. Obligation, Duties and Responsibilities of the entity

The AP is responsible for the flow of information between the relevant stakeholders in the requirement gathering phase, software development phase, as well as in the Implementation phase. AP can organize consultative meetings as needed to render the service.

## 10. Duration of the Services

The duration of the Services is to extend from the date of effectiveness of the Contract for a period of approximately 5 months.

## 11. Equipment to be provided by the consultant

As detailed under Section 5 herein above, the Consultant should arrange all facilities required for the consultancy service to be provided by him and the cost of such provision should be detailed in the Consultant's financial proposal.

## 12. Deliverables and Reporting

The main deliveries for this projects includes:
- Requirement Analysis documents
- System Prototype
- LMIS software packages within components
- LMIS configuration and relevant hardware installation in central, regional and provincial post offices
- LMIS hardware (servers and devices).
- Reports delivery after completion of each phase, requirement gathering phase, development phase and implementation phase.
- The inception and the interim reports shall be submitted electronically and as hard copies to the Director of AP.
- Hosting server and configuration
- Delivery of the software packages licenses
- User manual in three languages 100 copies
- Providing  training materials for system implementation
  - *Inception Report*

The inception report must contain a work plan which indicates the phases of the requirement gathering, design, prototyping, development and implementation the timing, key deliverables and milestones. As summary:

- Submission of requirement gathering documents(SRS)
- System Development document
- Software Design and architecture
- Submission of requirement analysis document
- System Testing
- Deploy first demo of the system

- ***Initial launch and submission Interim Reports***

The midterm report concludes initial launch of demo of platform. In this stage second enhanced demo of the LMIS should be come live.  The technical team of Post will observe the performance of the system and give feedback or request for changes if needed.

- ***Presentations of the final products and delivery of hardware***

The consultant should provide presentations of the project activity and development of the system AP employees as well delivery all the hardware and equipment to final system launch. This will help both parties to discuss and improve the system as per the need of entity as well test the system before actual implementation.

- ***Approval of Final Report***

This is the final system delivery with complete software and hardware components. As the final part of the project the system should be completely ready for operation. As expected the system should be used by Post employees. All the license for the products should be submitted by the company to AP.

**TERMS OF REFERENCE**

**FOR**

# Post Management Information System
# (PMIS)

**COMPONENT (3)**

## 1.0   Introduction

Knowing the current problems which is within the Afghan Government institutions including beurocracy, un-transparent long working processes and a bunch of other inappropriate work cycles, Afghan Post(AP) came with an idea to overcome the mentioned obstacles by starting to work on the Post Management System(PMIS) project.

The E-PMIS primarily mandate is to assist AP through facilitating and simplifying their day to day activities and provide with a one stop shop software that could be user friendly, easily operative, up to date, secure, safe and modifiable as per the requirements and business circumstances of AP.

Post Management System(PMIS) will be developed and implemented in following phases and anticipated timeline:

## 2.0   Objectives of the assignment

- To collect requirement and analysis for PMIS
- To Design PMIS
- To Implement and program PMIS
- To test PMIS and its component
- To develop Deployment PMIS
- Do Maintenance for PMIS

## 3.0   Scope of Services

PMIS Infrastructure consists of both Hardware and Software components, specifies the corresponding service level requirements, and describes the management and operations of the whole system. It may comprise briefly of the following components at a very abstract level include but not limited to:

a)   **PMIS central post office** – Post operation management in central bases
b)   **PMIS regional post offices** Post operation management regional bases
c)   **PMIS for Provincial post offices** - Post operation management in provincial bases

## 4.0   PMIS contains following modules/components:

- Departments and Users management system
- Letter Management System
- Task Tracking System
- Entry Registration Management System
- Meetings Management System
- Employees Profiles Management System
- Transportation Management System
- Asset Inventory Management System
- Projects Management System
- Departmental Monitoring and Evaluation System
- Procurement Requests Management System (PRMS)
- Cabinet decision follow-up and management system
- Official trips management system

- And other modules which will be modified into the E-Post Management as per the organization's requirements

### *4.1.* Departments and Users Management system

All of the system configuration will be accomplished using this module. The System Administrator(s) can create, modify or delete departments, user account, employee records, grant/prohibit access rights to system users and departments etc.

- Organizations structure creation and modification
- Users account management
- 4 Account types (Organization Authority, Department Authority, Data Entry, System Admin)
- Department level access control
- User level access control
- Modules configuration
- System base resources management
- User accounts log management

### *4.2.* Letters Management System (LMS)
This system will be used to centralize the letters exchange system of a ministry. By using this system, the ministry will catch the following benefits:
- Centralized documents management.
- All letters will be stored in a central database.
- Each department will have access to their own letters based on specified access levels
- The head of departments will be always informed of a new letter coming or going out
- The system will track whether a letter is delayed or is on schedule
- The Organization authorities will always have access to see which letters are pending and delayed and needs attention and the system will show an alarm icon on those entries
- The letters formatting will be generated directly by LMS thus Microsoft word or other software will not be required
- The option for attaching the scanned version of the letter will also be available
- Deletion or modification of a letter by the regular user will require the permission of his/her manager/director
- Four types of letters will be processed via this system which includes: Incoming letters, Outgoing letters, Peshnehaad, Estelaam
- A communication system is also available inside this system for discussing the problems raised on a specific letter.

### *4.3.* Task Tracking System (TTS)
Task tracking system may form part of project management and process management and can serve as the foundation for efficient workflow in an organization. Managers will have a detailed and up-to-date schedule, and are usually good at directing team members and moving the project forward.

- Manager to sub-ordinates task assignment
- Own tasks assignment

- Daily report of completed, ongoing and cancelled tasks
- Prioritization of tasks.
- Alert system for delayed tasks
- Follow up system for organization authority user account
- SMS and email alerts upon new task assignments
- Various filter options
- Main and sub tasks structuring capabilities
- Work plan creation capabilities
- Integrated with DRMS module
- One click today's report
- One click tomorrow's plan
- Ready for provincial directorates reporting
- And more…

### 4.4. Documents Repository Management System (DRMS)

This system is specially designed for storing and tracking the actions regarding the Cabinet Decrees, Consultations (shoras), and Decrees from the president etc. This module will track whether the responsibility of the organization against a decree is fulfilled or not which will help the organization better tracking of their obligations towards presidential decrees and decisions.

- Archiving all cabinet related documents
- Tracking of assignments of the Organization towards Presidential decrees etc.
- Integrated with TTS Module
- Auto notifications system
- Attachment capability of PDF version of documents
- Classification of responsibilities into leading and member categories
- Search option

### 4.5. Appointments Management System (AMS)

This module will organize the appointments of the organization and department authorities. Also it contains a section where all records of entry and exit of people who enter the ministry will be recorded and tracked the time they spent inside the organization.

- Meetings scheduling
- Gate entry registration
- Entrance time tracking
- Connection between reception and the organization authority office
- Approval or rejection of the meeting requests
- Archiving of the meetings
- Archiving of all gate entries

### 4.6. Applications Registration System (ARS)

The purpose of this system is to store all applications (formal letters, Maktob, estilam..) which are submitted by people in the central database. This system follows the administrative system of the organization. The system is capable of tracking the status progress of each application and

shows it very clearly that what is the current status of the application. The applicants will also have access to their relevant application online for tracking the status of their application.

- Applications registration panel
- Applications auto code generating
- Tracking of time spent in different departments
- Archiving of applications
- Filtering options

### 4.7. Inter-departmental Communication System (IdCS)

We have built a messaging and communication module in the system which will be used as a quick communication tool inside the organization.

- Department to department messaging
- Dashboard message popup
- SMS/email notification
- Group message sending option
- Header message alert
- Text formatting options
- Very easy to use

### 4.8. Assets Inventory Management System (AIMS) (under development)

Asset management System ensures the organization's assets are used in the most efficient manner, enhancing its profitability. This system can help the organization achieve the greatest benefit while maximizing an asset's lifespan. Physical assets are the largest part of the asset management System, but other types of assets need to be included.

- Assets Registration forms
- Categorizing the assets
- Tag ID generation
- Assigning the assets to employees
- Store inspections
- Integrated with EPMS module
- Detailed reports outputs
- Budget calculations

### 4.9. Project Management System (PMS)

PMS is typical system and a methodical process for collecting and using project information. This system will help to plan, execute, and close project management goals. PMS differ in scope, design and features depending upon the organization's operational requirements.

PMS supports all Project management knowledge areas such as :
- Integration Management;
- Project Scope Management;
- Project Time Management;
- Project Cost Management;
- Project Quality Management;
- Project Human Resource Management;

- Project Communications Management;
- Project Risk Management;
- Project Procurement Management;
- Project Stakeholder Management

### 4.10. Departmental Monitoring and Evaluation System (DM&ES)

This module will make the organization able to evaluate all of its entities on timely basis. This system will store the Annual plans of the departments and all of the sub-activities to be achieved for accomplishment of the annual plans. The system is designed to track the plans and its indicators and based on that each department will be evaluated and scored by the system.

- Annual plans/sub-activities registration
- Quarterly reports submission
- Reports QC and approval
- Different interfaces for organization authorities
- Departmental plans progress tracking
- Notification alerts
- Report generation
- Attachment of PDF version of the reports
- Easy to use

### 4.11. Employees Profiles Management System (EPMS)

The aim of developing this system inside the E-Ministry project is to keep the detailed record of all employees of the organization inside the datacenter of the organization. This information will include the personnel information, educational background, Job history, Skills, Promotions/demotions information and a lot more. Each department will keep the record of its own employees and the overall records will be kept by the organization authorities.

- Profile registration form
- Photo attachment
- Education, relations, job experience, skills, marital status, trips and other information
- Integrated with various other modules
- Filtering options
- Each department will have their own employee's records
- Organization authorities will have the overall access to profiles

### 4.12. Official Trips Tracking and Management System (OTTMS)

This module will manage and maintain the record of all official foreign trips regarding the workshops, conferences, short-courses, visits etc.

- Alerting the departments regarding a new official trip
- Departments can candidate the qualified employees
- Approval/Rejection will be in authority of organization authorities
- The whole working cycle of the trips will be tracked
- Two official trips will be recorded, employees trip and top official's trips
- Trips archive section

- Attachment of the final report of the trip
- Integrated with EPMS module
- Easy to use

## 4.13. Transport Management Information System (TMIS) (under development)

This module will keep track of all transport related information such as the number of existing vehicles in the organization, outgoing transport request orders, the fuel/oil expenses, millage of vehicles, the driver's information etc. This system will help the ministry manage its transportation facilities more effectively and efficiently, as well as this system will support the ministry for lowering the level of corruption in this section.

- Vehicles registration panel
- Drivers profiles integrated with EPMS module
- Oil usage records
- Vehicle request forms
- Vehicle in/out records
- Engine oil records
- And more…

## 4.14. Procurement Requests Management System (PRMS)

This module's purpose is to track all procurement requests which are made by different departments. The procurement requests will be tracked from the registration date upto final handover date.

- Integrated with LMS
- All procurement related request letters will be automatically registered
- The Finance and procurement departments are mainly involved in this module
- Progress updates for request letters
- Tracking all steps of procurement
- Department authorities will track their own request letters
- Organization authorities will track overall request letters
- Final cost will be deducted from the main organization's budget
- The summary of expenses along with other budget information will be shown on dashboard
- Archive of procurement request letters
- And more…

## 5.0 None-functional Requirement

### 5.1 Application User Interface

The Application interface should follow coloring on the Post New Logo and content accordingly. The interface should have a decent look to interact customers and user friendly. The Application shall provide a uniform look and feel between all the web pages.

### 5.2 Cost

The cost for maintenance of servers, licenses and other hardware and software is responsible of the company. License cost and its renewal policy should be provided by company.

### 5.3 Accessibility

The application should provide easy accessible through desktop to post employees. The system should be secured within latest and highest technology. The protection policy should be applied so that both we application and staff data are saved.

### 5.4 Reliability

This system should keep the database information's consistently. The application part of the system should never fail. In the database side, failures should be minimal and there should be crash recovery systems in order not to lose information in a potential database failure. System should display informative messages when it's components doesn't work properly.

### 5.5 Availability

The platform should be available 100% for the users and is used 24hrs a day and 365 days a year. The system shall be operational 24 hours a day and 7 day of a week. System should be tested against probable failures before publishing the first version or updated versions of application. Published version should be error free. In database side, in case of a failure, system should recover any information for user and system.

### 5.6 Supportability

The application should be available in three languages. The application should support all browsers such (Chrome, Mozilla safari, explorer etc.)

### 5.7 Security

This application should be secured within the latest and highest security technology.

### 5.8 Maintainability

Repair time should be no more than an hour. The application should be easy to extend. The code should be written in a way that it favours implementation of new functions. In order for future functions to be implemented easily to the application. A software should be used in development phase in order to reduce complexity, make the system traceable and recover the code from an unwanted crash while more than one developer is dealing with the code. Design elements should be documented well. All parts of the code should be easy to read.

### 5.9 Portability

The application be integrated within existence POST applications in case needed. The application will respond to the size of the screen and/or window the application is running in. The application should take less than 4 seconds to run.

## 6.0 Liaison with MCIT and Afghanistan Central Post

The Consultant shall maintain close liaison with Post director. The Director of AP appointed by Ministry of communication and information technology for the sole purpose of the services. The Director of AP shall be the primary contact point of the ministry for the Consultant.

## 7.0 Additional Responsibilities of the Consultant

- Development of Post Management System(PMIS)within its component and features based on request of the AP as mentioned in this document

- Development of system component such (Departments and Users management system, Letter Management System, Task Tracking System, Entry Registration Management System, Meetings Management System, Employees Profiles Management System, Transportation Management System, Asset Inventory Management System, Projects Management System, Departmental Monitoring and Evaluation System ,Procurement Requests Management System (PRMS), Cabinet decision follow-up and management system, Official trips management system And other modules which will be modified into the PMIS as per the organization's requirements
- The PMIS should be made in Dari, Pashto and English languages
- Complete training of the system.
- Complete Installation of the System and hosting server with related component in national data center of Afghanistan
- AP will receive source codes, licenses for servers and relevant software and hardware along with complete platform devilry by end of project.
- AP will regularly monitor the project system development process till completion.
- AP should receive project progress report and update of development each component on weekly bases of system development.
- Apply any further functions & features if requested by AP that are not mentioned here, these features do not affect the project cost.
- Hosting The PMIS will be in-house (national data center of Afghanistan) in server mentioned in first section.
- Wither the company does not meet AP expectations, AP have the right to request for changes based on the requirements and specification as needed by Post.

**8.0    Obligation, Duties and Responsibilities of the entity**

The AP is responsible for the flow of information between the relevant stakeholders in the requirement gathering phase, software development phase, as well as in the Implementation phase. AP can organize consultative meetings as needed to render the service.

**9.0    Duration of the Services**

The duration of the Services is to extend from the date of effectiveness of the Contract for a period of approximately 5 months after contract.

**10.0    Terms and Condition of System Maintenance**

The company should provide maintenance services for one year after the system deployment. During this period if any error or system failure occur the company is responsible to solve the problem on the spot.

**11.0    Equipment to be provided by the consultant**

Complete PMIS packages with all the components mentioned in section 6.0. In addition, delivery and configuration with all the setup of the following hardware:

- AP will receive source codes, licenses for servers and relevant software and hardware along with complete platform devilry by end of project.

### 12.0    Deliverables and Reporting

The main deliveries for this projects includes:

- PMIS platform software as one packages within complete setup and configurations services
- Delivery of the system within the components in CD
- PMIS platform complete setup and configuration
- PMIS platform hardware (servers and devices).
- Reports shall be generated after the completion of each phase, requirement gathering phase, development phase and implementation phase and share with Afghan Post.
- The inception and the interim reports shall be submitted electronically and as hard copies to the Director of Afghan Post.
- The final PMIS platform within license and source code should delivery to Afghan Post.
- Complete platform hosting and configuration and delivery to the entity
- Hosting of the platform in National Data Center of Afghanistan within server mentioned in first section of the document
- Delivery of the software packages within licenses for further platform integration
- *Inception Report*

The inception report must contain a work plan which indicates the phases of the requirement gathering, design, prototyping, development and implementation the timing, key deliverables and milestones. As summary:

- Submission of requirement gathering documents(SRS)
- System Development document
- Software Design and architecture
- Submission of requirement analysis document
- Deploy first demo of the system
- Live system for Post technical team review


- *Initial launch and submission Interim Reports*


The midterm report concludes initial launch of demo of platform. In this stage second enhanced demo of the Application should be come live.  The technical team of Post will observe the performance of the system and give feedback or request for changes if needed.

- *Presentations of the final products and delivery of hardware*

The consultant should provide presentations of the project activity and development of the platform to Afghan Post employees as well delivery all the hardware and equipment to final system launch. This will help both parties to discuss and improve the system as per the need of entity as well test the system before actual implementation.

- *Approval of Final Report*

This is the final platform delivery with complete software and hardware components. Complete configuration of the system in both central and provincial level. As the final part of the project the system should be completely ready for operation. As expected the system should be used by Post employees. All the  license for the products should be submitted by the company to Afghan Post.

**TERMS OF REFERENCE**

**FOR**

# Afghan-Post Mobile Application
## Component (4)

## 1.0    Overview

The "Afghan Post Mobil APP" is a GPS-based mobile application which helps people to track their packages, Parcels, small packets, registered documents and find the closest Post office & based on the user's current position and other information like location and more. The application should be free to download for dual-platform (Android, ios..) from either a mobile phone application store or Afghan Post website/similar services. The application should display complete history of a package based on track number and show current location with destination. The application should also facilitate the delivery process and send pop-up notification from the status of the delivery to the user. Each Post office should provide information such (Exact Location, Contact Person, Mobile number and other information using the web-portal. This information will act as the bases for the search results displayed to the user. An administrator also uses the web-portal in order to administer the system and keep the information accurate. Furthermore, the software needs both Internet and GPS connection to fetch and display results. All system information is maintained in a database, which is located on a web-server. The software also interacts with the GPS-Navigator software which is required to be an already installed application on the user's mobile phone. By using the GPS-Navigator, users can view desired Post Office on a map and be navigated to them to see contact details, working hours and other. The application should have an option to the user for complain and other feedback. The application also has the capability of representing both summary and detailed information about the Afghan Post Services, Package Information/record history and more details requested by the user.

## 2.0    Project Introduction:


In the last decade, Internet and Smartphone users have increased rapidly. This leads much simplicity on people's life in terms of communication. However, there are also some concepts that could not be resolved yet. Afghanistan Post has a large number of customers that tackle with many problems daily. Afghanistan Post would like to reach almost every customer and provide facilitation to them regard packages, Parcels, small packets, registered documents. Mobile application is one of the portal to reach our customers and solve many of their problem through. In addition, as of now our customers has to visit Afghan Post central office for sending their packages, Parcels, small packets, registered documents where many of them do not have prior information about the rates, packaging and other. This mobile application will be a bridge of information assisting every customer in aspect of tracking packages, Parcels, small packets, registered documents, view rates, office locations, shipment details and other. In this mobile application our focus on our customers to help them with every single problem.

**-    Application perspective**

This system will consist of two parts: one mobile application and other web portal the content management system. The mobile application will be used for tracking parcels and show nearest delivery post station in addition present information history of the package. However, the CMS (content management system) will be used to update the content and information on the application. The expected mobile application shall display complete information about postal services, working hours, events offers and other. In addition, application shall give options to the user to check prices for parcel according to the weight and destination country. The functionality summary list is added in end of the TOR. The mobile application will need to communicate to a GPS application within the mobile phone, which in turn communicates with a physical GPS device to find the location of the user, see Figure 1. The GPS will provide the mobile application

with locations of both the user and the post office and the distance between them, but it will also provide maps and the functionality to display the application's data on the map.

The functionality provided by the GPS will be embedded into the application in order for the user to be able to use the functions in the application in a seamlessly manner.

Since this is a data-centric product it will need somewhere to store the data. For that, a database will be used. Both the mobile application and web portal(CMS) will communicate with the database, however in slightly different ways. The mobile application will only use the database
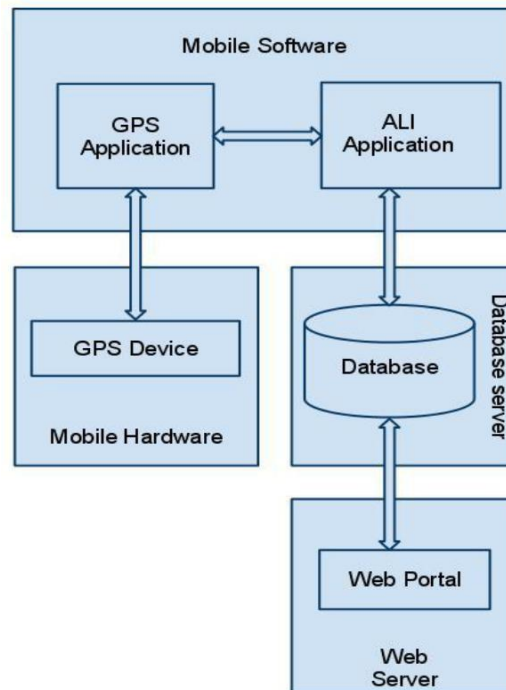


to get data while the web portal will(CMS) also add and modify data. All of the database

## 3.0    Objectives of the assignment

- To develop mobile application within the latest technology, cross platform both Android and iOS
- To facilitate tracking of packages, Parcels, small packets, registered documents
- To Register and add address of all postal offices from both central and provincial into Google Map
- To  provide details information regard postal services in Afghanistan
- To assist customers finding nearest postal location
- To help customers on postal services related quires
- To collect customer's opinions about postal services
- To provide update information to customers
- To provide rating information based on user input and destination information
- To provide push notification regard movement of the parcel from one destination to another

### 4.0    Scope of Services

The "Afghan Post Mobil APP" is a GPS-based mobile application which helps people to track their packages, Parcels, small packets, registered documents and find the closest Post office & based on the user's current position and other information like location and more. The application should be free to download from either a mobile phone application store, Afghan Post website or similar services. The application should display complete history of a package based on track number and show current location with destination. The application should also facilitate the delivery process.

Each Post office will provide information such as (Exact Location, Contact Person, Mobile number and other information using the web-portal. Location of the Post Offices should be register in Google map by Consultant. This information will act as the bases for the search results displayed to the user. An administrator also uses the web-portal in order to administer the system and keep the information accurate.

Furthermore, the software needs both Internet and GPS connection to fetch and display results. All system information is maintained in a database, which is located on a web-server. The software also interacts with the GPS-Navigator software which is required to be an already installed application on the user's mobile phone. By using the GPS-Navigator, users can view desired Post Office on a map and be navigated to them to see contact details, working hours and other. The application also has the capability of representing both summary and detailed information about the Afghan Post Services, Package Information/record history and more details requested by the user. Consulate shall provide training for 200 employees of Post in different sessions.

### 5.0    Terms and Condition of System Maintenance

The company should provide maintenance services for one year after the system deployment. During this period if any error or system failure occur the company is responsible to solve the problem on the spot.

### 6.0    Liaison with and Afghanistan Central Post

The Consultant shall maintain close liaison with Post director. The Director of AP appointed by Ministry of communication and information technology for the sole purpose of the services. The Director of AP shall be the primary contact point of the ministry for the Consultant. During the development stage more function shall be requested to add into the application, the software company should be agree with it.

### 7.0    Additional Responsibilities of the Consultant

With the mobile application, the users should  be able to:

- Do requirement gather for the application
- Do requirement Analysis for the Application
- Develop Application Prototype
- Develop Application for Android and iOS

- Launch the application on APP store both(android and iOS version)
- Develop functions to track the status of all incoming or outgoing packages, Parcels, small packets, registered documents
- Develop push notifications function to get updates on shipments for the application
- Create a shipment label and request a pickup (shipping account required)
- Develop function for Enroll for Afghan Post Delivery Manager
- Develop function for Hold a package at an Afghan Post location
- Develop function for delivery instruction for the courier
- Develop function for Sign for a package requiring your signature
- Develop function for Scan a barcode for easy tracking
- Develop function for Afghan Post location near user
- Develop function for Get shipment cost estimates and delivery times
- Develop function for Search the list of shipments by tracking number, references, vendors and more
- Develop function for User account created will automatically be added to app shipment list when user is logged in.
- Develop function for to Allow users to directly search for package without registration
- Develop function for Give option to the user to register themselves to the system and get the update about the status of their parcel
- Develop function for Search for the package and view history
- Develop function for Track each package and view current location
- Develop function for to View prices based on the weight and destination country
- Develop function for to Check arrival and delivery time for different countries
- Develop function for Pop-up notification to the user regard the status of the package and its current location display post current services
- Develop function for to Show post events
- Develop function for Provide sale options for post cards
- All the information should be shown in Dari, Pashto and English languages
- Develop function for Weight calculation options for different items
- Develop function for Rate calculation according to the size e.g. kg,cm,..
- Develop function for fast delivery
- Develop control to show Working hours and opening for each post office
- Develop function for Customer support option or direct call through APP
- Develop function for Display list of the postal codes and assist the user how to use them
- Add each post office address(Central, Provincial and Regional) to Google Map
- Register each Post office location within details into GoogleMap
- Do social media marketing for application
- Any other function will shall be added upon Afghan Post request during the development stage

## 8.0   Obligation, Duties and Responsibilities of the entity

The AP is responsible for the flow of information between the relevant stakeholders in the requirement gathering phase, software development phase, as well as in the Implementation phase. AP can organize consultative meetings as needed to render the service.

### 9.0     Duration of the Services

The duration of the Services is to extend from the date of effectiveness of the Contract for a period of approximately 5 months after the contract.

### 10.0     Equipment to be provided by the consultant

This section contains all of the functional and quality requirements of the system. It gives a detailed description of the system and all its features.

### 11.0     Functional Requirement

This section includes the requirements that specify all the fundamental actions of the software system. Over all the

 application should consist of these functionality (Postal tracking such as parcel/mail within complete history from source to destination, Afghanistan post locations in central and provincial base within complete details contact information, Map of the post office, Automatic weight measurement and price calculation, prices should be display according to the location of the country, customer feedback option in case the customer is not able to get what they are looking for so should have option to contact and share their ideas for services improvement. The application should be able to easily integrated within our existence database and systems. The application should provide postal codes and roadmap of the submission of their packages, Parcels, small packets, registered documents. The application should provide complete guideline to the customer rules and regulation of the Afghan Post Services. The application should also provide option parcel locker integration in case the user has something new on their boxes could be notified according to that user.

- *Site Adaptation Requirements*

 The application should be available for both Android and iOS platform. Users should install the application from Google Play Store or app store.

- *Download mobile application*

A user should be able to download the mobile application through either an application store or similar service on the mobile phone. The application should be free to download. The application should be hybrid instable in any android and iOS devices.

- *Download and notify users of new releases*

When a new/updated version or release of the software is released, the user should check for these manually. The download of the new release should be done through the mobile phone in the same way as downloading the mobile application.

- *Multi-languages support*

The application should support three languages (English, Dari and Pashto). All the information from search to the map should be shown in Afghanistan languages and displayed accordingly. The exact same information should be displayed. The content should follow translation standards.

- *Track a package without registration*

The user should be able to track a parcel and get other information without registration. User registration is must just in case the user like to be notified.
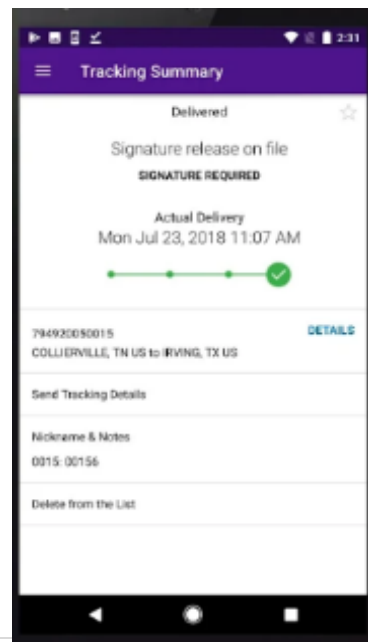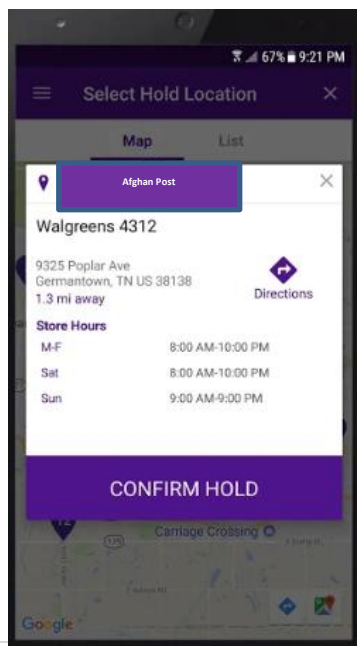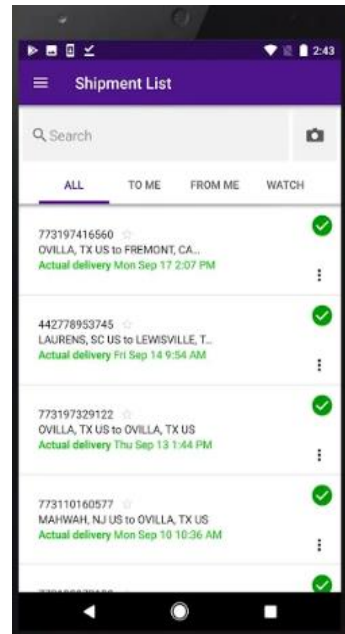
- *User log-in - Mobile application*

User can login within the created user name and login automatically next time. The user and password should be stored in mobile phone.

- *Retrieve password*

Given that a user has registered, then the user should be able to retrieve his/her password by e-mail. User should be able to register through the mobile application in case they have already submitted a parcel and would like to track and get notified about the exact location of the parcel. The user must provide user-name, password and e-mail address. The user can choose to provide a regularly used phone number.
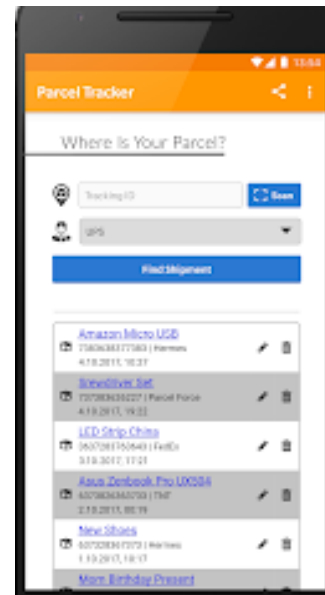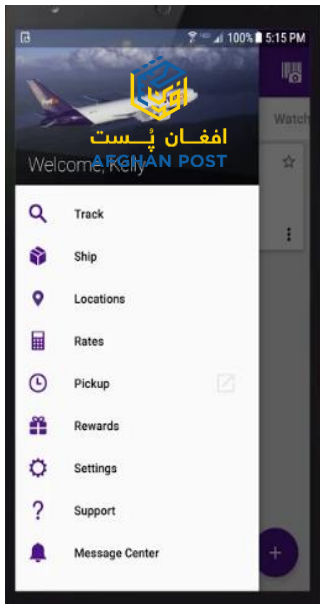
- *Track the status of all incoming or outgoing packages, Parcels, small packets, registered documents*

- Create a shipment label and request a pickup (shipping account required)
- package management and complete shipment history
- Parcel tracking based on the barcode scanner
- Parcel tracking based on the ID
- The application should display complete shipment until the delivery stage
- Enable push notifications to get updates on your shipments

- *Mobile application - Search*

Given that a user is logged in to the mobile application, then the first page that is shown should be the search page. The user should be able to track for parcel even without login, according to several search options. The search options shall be designed for the track number. It should help the user while adding the track number and give hint for adding the track number in a correct format. There are several search criteria and it will be possible for the administrator of the system to manage the options for those criteria that have. The result of the search will be viewed either in a list view or in a map view, depending on what criteria included in the search. Map view will show each parcel current location as a pin on the map as well as the user's own location. In both views the users will be able to either select a post office as target destination or get information how to get there, or view the information of a specific post office. The web portal will provide functionality to manage the system and the Post Office information. It will also provide information about the system, for example show when there is a new update.

- *Mobile application - Search result in a map view*

Search results can be viewed on a map. On the map, the relevant and closest post office according to the user's position is shown. The map view should include a button that, when selected, should display different filtering options in a filtering menu.

- *Mobile application - Search for office location*

If user search for a specific location information link, map contact details should be given to the user

- *Mobile application - Search result*

Search results can be viewed in a list or roadmap of parcel. Each element should include the nearest post office name, telephone number, and give the user information regard pickup or delivery time .

- *Mobile application – Search in any language*

The application should provide option for search in any languages. The keyword for search could be in any language that shall supported by the application. In case of the numbers if the user enters numbers from a Dari keyboard the system should translate it automatically and show the results.

- *Mobile application - Navigation to a post office*

A user should be able to select a pin on a map or an element on a list. When a selection is made,the location of the post office should be sent to the mobile phone's GPS-navigation program. The user should then be navigated to the destination. When the destination is reached, a user should be able to go back to the search page on the mobile application.

- *Mobile application –Post office Location*

The application should show list of the post offices and also provide option for user to search for it.

- *Mobile application –Post code*

The application should provide a user friendly interface for users to view list of the postal codes and how to use them.

- *Mobile application –Complain Registration*

The application should provide options for users to register complain and the CMS should show list of the complains received by system and follow them with the customer. The interface should be simple and provide option for voice recording or writing in as text. The CMS should provide a user friendly interface to handle the users received messages and feedback easily.

- *Mobile application – weight measurement and prices*

A user should be able to check for the prices according to the item weight. All the prices should be in Afghani. The use shall enter parcel weight, volume and relevant specification and system calculate the price. The user shall also select the destination country for checking the exact prices.

- *Mobile application – Moving between pages*

A user should be able to switch between pages and view information about Afghan Post.

- *Mobile application - Search by price*

A user should be able to input a maximum and a minimum price range. The result is displayed in a list view by default. User can also enter price or select from the list to check the destination country. There should be also option for weight so the price should be accurate.

- *Mobile application - Search by destination*

A user should be able to input or select from the list of country for price measurement. In order for a user to search by destination.

- *Mobile application - Free-text search*

A user should be able to conduct a search by providing either price, Post office name, or menu in the free-text search field. The result is displayed in a map view by default.

- *Mobile application –Search by a customized option*

AS this documents are not the final the requirement may change and more search option will be provided.

- *Mobile application - No match found*

If no match is found the user should be informed but kept on the search page in order to get the possibility to conduct a new search right away.

- *Mobile application - Profile page*

A user should have a profile page. On the profile page a user can edit his/her information, which includes the password, e-mail address and phone number. A user should also be able to choose what language the mobile application should be set to. The different language choices are English, Dari and Pashto.

- *Mobile application – Content Management System (Web Portal)*

A dashboard should be developed to gives user-friendly options to add, organize, and edit mobile application data, content for package tracking, post office location, sales and marketing items to event sessions, inventory list and anything else applicable. Files such as PDF brochures and Microsoft Suite documents should be easily uploaded and managed in the admin system so too can links to websites, native text, images, and a host of other file formats and types. While some types of integration—with 3rd-party video might need the expertise of developers to integrate and manage, the user-friendly CMS is able to give admin users control over most, if not all, of application content. Uploaded content in the dashboard is divided into different types or file formats (e.g. PDF brochures, event sessions, postcards etc.) for easier organization and admin users are able to sort each list of content by criteria like unique identifier, title, and so forth. Relationships between content items (i.e. relating a PowerPoint presentation to a sponsor message) are also intuitively managed in the dashboard.

- *Mobile application- Easier Content Integration*

The application should be able to integrate with any system and database that will be discussed during development stage. Since Afghanistan Post will be uploading massive amounts of content for a mobile app and offers a few alternatives to simply uploading each piece of content individually. Certain types of content is importable via Excel Spreadsheets provided they are in the correct format with proper labels attached. Certain content already available on a website or via third-party source with subsequent updates to the original source also applied to the mobile app.

Another option should be building a custom data connector for instances when an existing content management system (CMS) already contains a large majority of content to be included in the mobile app. In the final instance, the Dashboard can also be used to manage features like color schemes and push alerts; an option to force update content from the existing CMS to the mobile app is also available in cases where the typical once-per-day automatic update isn't fast enough to catch an urgent change, a timely promotion, and so forth.

- *Mobile Application – Rate Calculation*

The system should calculate prices according to the input by users. The application may should a table of prices with the weight and destination in addition add a customize option so that user can add their desired package weight by themselves. After the input the system should also display a complete roadmap to the user about how the price is calculated along with tax and other factors.

- *Mobile Application - Managing Users*

CMS should provide option role-based user authorization to give users complete control over who accesses app content. Admin users may add general roles such as "internal" and "general" and assign created roles to specific app content; users registering in the app must then be accepted or declined. The former are assigned certain roles dictated by admin users to access authorized content in the app. In short, the feature segments app users for a variety of uses; to keep confidential content away from unauthorized users, to create a sense of exclusivity by unlocking certain content to certain users; or to simply better track individual user actions in the app.

- *User characteristics*

There are three types of users that interact with the system: users of the mobile application, Post personals and administrators. Each of these three types of users has different use of the system so each of them has their own requirements.

The **mobile application users** can track their packages, Parcels, small packets, registered documents and EMIS, get notification on time while from one place to next destination also will be able to search for nearest post office, choose weight of the item and view the prices. In order for the users to get a relevant search result there are multiple criteria the users can specify and all results matches all of those.

The **Post personnel** will not use the mobile application but access the web portal (Content Management System) to update the application content. This user will manage the information about package, help users and update post offices location. for example, a description of the post office, contact information and their menu.

The **administrators** will interact with the web portal(CMS) and create user/manage users approve content and provide technical help. They are managing the overall system so there is no incorrect information within it.

- *Mobile Application – Push Notification*

Dashboard admin users to send messages directly/ push notification from application to all of the registered users of their mobile app, or alternatively a certain subset of users such as only Android devices or iOS. A specific section or page once tapping on the notification.

- *Mobile Application - Graphics and Colors*

The Dashboard, including the app icon, splash screens, and sponsor graphics. While the icon and primary splash screen require a resubmission to Apple for inclusion in the mobile app, all other graphics—such as a secondary splash screen, banner ad, title bar logo, and so forth—can be uploaded and submitted as an app update in real time. Take advantage of this tool to roll out timely promotions of new products, services, or sponsor messages without needing to wait on a mobile application development team to upload the new graphics. Every mobile application's color scheme is should also be customized via the Dashboard. From major elements such as the tab bar along the bottom of the app to accent colors and other small details, the visual presentation of the app may be fine-tuned by manipulating over 30 color settings and entering specific hex values or selecting colors from a built-in color palette. Change color schemes in real-time for special promotions or marketing drives and make the app an embodiment of internal initiatives instead of a generic mobile app only meant to share content users.

## 12.0   None-Foundational Requirement

The non-functional requirements conclude Software system attributes such as reliability, availability, security and maintainability as follows:

- *Reliability*

This system should keep the database information's consistently. The application part of the system should never fail. In the database side, failures should be minimal and there should be

crash recovery systems in order not to lose information in a potential database failure.  System should display informative messages when it's components doesn't work properly.

- *Availability*

The application should be available 100% for the users and is used 24hrs a day and 365 days a year. The system shall be operational 24 hours a day and 7 day of a week. The application should be connected to the GPS device. System should be tested against probable failures before publishing the first version or updated versions of application. Published version should be error free. In database side, in case of a failure, system should recover any information for user and system.

- *Security*

This application must be secured within the latest and highest security technology. The back-end server shall only be accessible to authenticated administrators. The application back-end databases shall be encrypted. All connection between the application and sub-system (such GPS system, maps shall be end to end connection). The application size should be not more than 5mb(megabyte).The messages should be encrypted for log-in communications, so others cannot get user-name and password from those messages. The system must not request unnecessary permissions from the user in order to prevent unwanted attacks. Stored data of the application should not be reached by other applications that is installed in the user's mobile device.  Stored data in the mobile device and sent data via internet should be encrypted. Send and receive of data should be transferred via a secure connection. Data that come from the application should encrypted again in the database side. The application can access camera and location of the user for finding the post locations and scanning the bar code from package.

- *Maintainability*

Repair time should be no more than an hour. The application should be easy to extend. The code should be written in a way that it favours implementation of new functions. In order for future functions to be implemented easily to the application. A software should be used in development phase in order to reduce complexity, make the system traceable and recover the code from an unwanted crash while more than one developer are dealing with the code.  Design elements should be documented well. Since programming language is object-oriented, program tasks are independent of each other and therefore easier to maintain. All parts of the code should be easy to read.

- *Portability*

The application will run on all Android/iOS devices. It shall be 5mb in size. The application will respond to the size of the screen and/or window the application is running in. The application should take less than 4 seconds when running on an Android/iOS phone and less than 8 second when on an emulator or tablet. The application will run fine until the user begins to multi-task between 3 or more processes. The application must support approximately 10,000,000 users at the time of launch based on the population of Afghanistan.

- *User interfaces*

The interface should be user friendly and develop for both (Android and iOS) platform. The interface should follow standards however a sample will be providing to facilitate and give idea to the software development team. Also the company should share design and templates after the approval of the Post they can get with the final product.

- *Hardware interfaces*

Since neither the mobile application nor the web portal have any designated hardware, it does not have any direct hardware interfaces. The physical GPS is managed by the GPS application in the mobile phone and the hardware connection to the database server is managed by the underlying operating system on the mobile phone and the web server.

- *Software interfaces*

The mobile application communicates with the GPS application in order to get geographical information about where the user is located and the visual representation of it, and with the database in order to get the information about the Post office, see Figure 1. The communication between the database and the web portal consists of operation concerning both reading and modifying the data, while the communication between the database and the mobile application consists of only reading operation.

- *Communications interfaces*

The communication between the different parts of the system is important since they depend on each other. The interface should be able to integrated within existence database or system of posts.

## 13.0    Deliverables and Reporting

The main deliveries for this projects includes:

- Afghan Post Mobile Application within components Live on APP store ready for download
- Configuration of CMS for Mobile application content Update
- The inception and the interim reports shall be submitted electronically and as hard copies to the Director of AP.
- Hosting server and configuration of CMS & Mobile Application
- Launch of Mobile Application and getting access to APP store etc.
- Launch cost of the application in App store and hosting the APP is responsibility of consultant
- Delivery of the software packages licenses
- User manual in three languages
- Providing training materials for system implementation

**- Inception Report**

The inception report must contain a work plan which indicates the phases of the requirement gathering, design, prototyping, development and implementation the timing, key deliverables and milestones. As summary:

- Submission of requirement gathering documents(SRS)

- System Development & Software Design and architecture
- Submission of requirement analysis document
- Deploy first demo of the Mobile Application

- **Initial launch and submission Interim Reports**

The midterm report concludes initial launch of demo of platform. In this stage second enhanced demo of the both applications (web & mobile) should be come live.  The technical team of Post will observe the performance of the system and give feedback or request for changes if needed.

- **Presentations of the final products and launch application in APP store**

The consultant should provide presentations of the project activity and development of the Application to AP employees as well delivery all the hardware and equipment to final system launch. This will help both parties to discuss and improve the system as per the need of entity as well test the system before actual implementation.

- **Approval of Final Application & Report**

This is the final Afghan Post Application & Project documentation. As the final part of the project the Application and Web portal should be completely ready for operation. As expected the system should be used by Post employees. All the license for the products should be submitted by the company to AP.

- **Staffing and Skill Mix Needed**

The successful team will be comprised of both local and international experts with the specific experience and background noted. It is suggested that in putting together its team, consultants consider designating individuals with the following roles, responsibilities and backgrounds:

**The core staff to be evaluated will include:**

1. *Position K-1: Project Manager*
2. *PositionK-2: International IT Consultant*
3. *Position K-3: E-commerce Expert*
4. *Position K-4: E-Logistic Expert*
5. *Position K-5: MIS Expert*
6. *Position K-6: System Developer*
7. *Position K-7: Web development specialist*
8. *Position K-8: CMS Developer*
9. *Position K-9: Mobile App Developer*
10. *Position K-10: Software Engineer*
11. *Position K-11: Online Marketing Expert*
12. *Position k-12: System Tester/trainer*
13. *Position k-13: Coordination Officer*

| S. No. | Staff Position | Number | Estimated Person Month |
|--------|----------------|--------|------------------------|
| **Key Professional Staff** | | | |
| 1 | *Position K-1: Project Manager* | 1 | 5 |
| 2 | *PositionK-2:International IT Consultant* | 1 | 5 |
| 3 | *Position K-3: E-commerce Expert* | 1 | 5 |
| 4 | *Position K-4: E-Logistic  Expert* | 1 | 5 |
| 5 | *Position K-5:MIS Expert* | 2 | 5 |
| 6 | *Position K-6: System Developer* | 4 | 5 |
| 7 | *Position K-7:web development specialist* | 2 | 5 |
| 8 | *Position K-8: CMS Developer* | 1 | 5 |
| 9 | *Position K-9: Mobile App Developer* | 2 | 5 |
| 10 | *Position K-10: Software Engineer* | 1 | 5 |
| 11 | *Position K-11: Online Marketing Expert* | 1 | 5 |
| 12 | *Position k-12: System Tester/trainer* | 1 | 5 |
| 13 | *Position k-13: Coordination Officer* | 1 | 5 |
| **Estimated Person Months for Key Staff:** | | **19** | **5** |

## 14.0    JOB DESCRIPTIONS AND MINIMUM QUALIFICATIONS

The job descriptions and minimum qualification of the key/other professionals for the core Team of the Consultants shall be as given below:

| SL | Positions | Job Descriptions | Minimum Qualification |
|----|-----------|------------------|-----------------------|
| *1* | *Project Manager* | a)  *Standards and timetable for the preparation of annual work programme and quarterly review of these, review of work programmes; format and schedule of project reporting;*<br>b)  *Help design and maintain a record-keeping system for all project correspondence with client;*<br>c)  *Assist with the identification of training needs and propose on - the-job training programme to meet those needs ;*<br>d)  *Be responsible for all reports (monthly, quarterly etc.)produced* | a)  *Master degree in Project Management*<br>b)  *At least have 5 years' experience as project manager*<br>c)  *Lead Information technology related projects* |

| 2 | IT Consultant (International) | a) Develop system structure<br>b) Provide concepts for systems integration<br>c) Guide team on Content Management system<br>d) connect and enter/access information for project-related needs in a timely manner.<br>e) Outline PMIS,LMIS,APEC and Mobile application development technologies<br>f) Help the them on implementation of B2B,B2C and G2G model to apply in current Project | a) M.A. (or higher) in Information Technology (IT), engineering, data or computer science, or related discipline;<br>b) Certification as either Microsoft Specialist (MS) in software or database development, Microsoft, High-level proficiency in Visual Studio.NET C#;<br>c) Working knowledge of technologies such as XML Web Services (SOAP, WCF) and RESTFul Services (Web API);<br>d) Experience in web technologies such as Jquery, Ajax Teknolojileri, CSS, XML, Javascript, HTML, and XHTML;<br>e) Experience developing an application using ASP.NET, C#.NET, ADO.NET;<br>f) Experience with Windows services, web technologies, web services, Net Framework 4 / 4.5; |
| --- | --- | --- | --- |
| 3 | e-commerce expert | a) Outline the platform model to the system developer and follow e-commerce model B2B and B2C<br>b) Provide concept of the platform and apply e-commerce standards<br>c) Provide concept of the e-commerce platform to the team<br>d) Co-ordinate all activities and information/feedback with client and afghan post | a) Bachelor degree in computer science with Specialization in e-commerce<br>b) At least 5 years of experience directly to e-commerce ;<br>c) At least developed 5 e-commerce websites or lead similar projects in national and international level |
| 4 | E-Logistic Expert | a) Outline the e-logistic model to the system developer<br>b) Provide concept of the system and apply e-logistic standards<br>c) Add additional functionality to the system<br>d) Standard<br>e) Provide concept of the e-commerce platform to the team<br>f) Co-ordinate all activities and information/feedback with client and afghan post | a) Have Bachelor degree in Procurement/Logistics or relevant fields.<br>b) At least 5 years of experience directly to Logistics, Postal Services, Operation Management, Transportation and supply chain Management;<br>c) At least have working experience within 5 logistics companies in national and international level with proof of portfolio |
| 5 | MIS Experts | a) Participate and advice the team for MIS systems<br>b) Apply MIS standards to the LMIS, PMIS, APEC and Post APP<br>c) Apply Amazon design and layout and functionality to the web application<br>d) Provide concept of the system and apply e-logistic standards | a) Having bachelor degree in Computer Science<br>b) Developed at least 5 MIS systems with proof of portfolio |

| | | | |
|---|---|---|---|
| | | e) Add additional functionality to the system<br>f) Provide concept of the e-commerce platform to the team<br>g) Co-ordinate all activities and information/feedback with client and afghan post<br>h) Participate and advice the team for MIS systems<br>i) Apply MIS standards to the PMIS | |
| 6 | System Developers | a) Develop the ecommerce platform,LMIS,PMIS.<br>b) Develop the overall system within the component and features mentioned requested in this document<br>c) Develop the outline concept of the LMIS<br>d) Develop the overall system within the component and features mentioned in section 3<br>e) Change the abstract function to actual piece of work<br>f) Add extra functionality to the system<br>g) Design a smooth and user friendly interface for the systems<br>h) Develop LMIS/APEC/PMIS databases | a) Bachelor degree in Computer Science<br>b) At least 5 years of experience related to System Management ;<br>c) Have complete understanding of the e-commerce platform, online shopping, online logistic services, tracking of transportation, office management<br>d) At least have working experience within 5 Government or International organizations Developed at least 5 MIS systems with proof of portfolio |
| 7 | Web Development Specialists | a) Design and develop the web application/interface of the systems needed<br>b) Apply Amazon design and layout to the web application | a) Bachelor degree in Computer Science<br>b) Developed at least 5 websites with proof of portfolio |
| 8 | CMS Developer | a) Develop the outline concept of the CMS for online shopping and other project three components<br>b) Develop the overall system within the component and features mentioned in section 3<br>c) Change the abstract function to actual piece of work<br>d) Add extra functionality to the system<br>e) Design a smooth and user friendly interface for the system<br>f) Develop CMS database | a) Bachelor degree in computer science<br>b) Developed at least 5 years' experience with CMS related systems<br>c) Have complete understanding of the CMS(WordPress, druple, Joomla) |

| 9 | Mobile App Developers | a) Outline the APP model to the system developer<br>b) Provide concept of the system and apply e-logistic standards<br>c) Add additional functionality to the system<br>d) Standard<br>e) Provide concept of the e-commerce platform to the team<br>f) Co-ordinate all activities and information/feedback with client and afghan post<br>g) Add Post offices locations in Google Map<br>h) Create customized APP in google map for each Post office in Central, Provincial and regional base<br>i) Add rating function to the application<br>j) Add Live chat to application for customer assistance and support<br>k) Design a user friendly application easy to navigate | a) Bachelor degree In Computer Science<br>b) At least 5 years of experience in mobile application Development<br>c) At least developed 5 Andriod and 5 iOS application live on APP store with proof of portfolio<br>d) Good analytical skills to understand the requirements and develop solutions.<br>e) Strong competency in building cross-platform mobile applications<br>f) Use Xamarin. iOS and Xamarin.Android for creating native user interface. Solid understanding of full mobile development life cycle.<br>g) Working Knowledge of Data Parsing,Storing and related patterns.<br>h) Implement RESTFUL API calls to communicate with server.<br>i) Have experaince with GPS functions in Mobile<br>j) Use Push notifications functions<br>k) Use various design patterns manage code and data efficiently.<br>l) Designing, coding, debugging and deploying applications<br>m) Use of Google map |
| 10 | Software Engineer | a) Provide requirement gathering documents<br>b) Develop use case for the platform actors | a) Have bachelor degree in Software engineering<br>b) Developed and participated in 5 smiler projects |
| 11 | Online Marketing Expert | a) Advice and apply online marketing policy to the system<br>b) Help system and web developer in branding and marketing standards for online business<br>c) Develop long-term marketing policy for the PEC platform | a) Have degree in online marketing<br>b) Have at least 5 years experience In online marketing |
| 12 | system trainer/Tester | a) Prepare training materials such users manuals for different users, develop system documents<br>b) Provide training materials in 3 languages<br>a) Test the LMIS/PMIS/APEC each component<br>b) Provide black box and white box test for LMIS/PMIS/APEC<br>c) Make the LMIS/PMIS/APEC bug free<br>d) Develop test seniors for LMIS/PMIS/APEC<br>e) Prepare training materials for LMIS/PMIS/APEC<br>f) Develop user manual for | a) Have bachelor degree in Software Engineering<br>b) Test and training experience in relevant MIS applications<br>c) Developed and participated in 5 smiler projects |

| | | | | |
|---|---|---|---|---|
| | | | different users, develop system documents<br>g) Train Post staff on how to use LMIS/PMIS/APEC<br>c) Provide training materials in 3 languages<br>d) Assist in content translation of the system | |
| 13 | Point of Contact | | a) To receive urgent calls and facilitate contact among team with the entity<br>b) Coordinate meetings between Afghan POST and consultancy company<br>c) Point of contact between company and Afghan Post<br>d) | a) Have good communication skills and understanding of the information technology |

## 15.0    Term and condition of Payments:

| Schedule of Payment | | | |
|---|---|---|---|
| 1 | 1st Installment | 70% | 70 % of the payment will be made upon the successful:<br>- Launch of the platforms(APEC,PMIS,LMIS) and mobile application both online and local<br>- Approval of IT Technical Team for systems performance<br>- Launch of the system on APP Store (2 Mobile Applications)<br>- Delivery of all the equipment's as requested in this document.<br>- Delivery of the key license of softwares<br>- Delivery of system source code on CD<br>- After complete installation & configuration of systems and hardware in both Central and Provincial Level |
| 2 | 2nd Installment | 20% | 20% of the payment will be made upon delivering the required end user training and requested reports. |
| 3 | 3rd Installment | 10% | 10% of payment upon the successful completion of:<br>- System operational grantee period of one year.<br>- After completing maintenance period |

Note: 10 % of the performance guarantee will be returned upon the completion of the warranty period.

## 16.0   Selection Criteria:

*The selection criteria for this project is QCBS( Consultant Quality and Cost Based Selection).*