



**PROJECT IMPLEMENTATION UNIT (PIU)  
PUNJAB URBAN LAND SYSTEMS  
ENHANCEMENT (PULSE)  
Punjab Land Records Authority (PLRA)  
Government of the Punjab**

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**TERMS OF REFERENCE**

**PUNJAB URBAN LAND SYSTEM ENHANCEMENT (PULSE)**

**ISLAMIC REPUBLIC OF PAKISTAN  
PUNJAB PROVINCE**

**HIRING OF AN INDIVIDUAL CONSULTANT AS**

**ANDROID DEVELOPER**

**July 2023**

## **Terms for Reference for Android Developer**

### **1. BACKGROUND INFORMATION**

Board of Revenue, Punjab with the technical & financial support of World Bank is preparing Punjab Urban Land System Enhancement (PULSE) project for the establishment of a unified central database of all types of urban properties (societies / authorities / development agencies), rights and charges. The proposed system will not merely a GIS & Parcel based one but has all possible functionalities to serve as a robust platform for creation of ‘Spatial Data Infrastructure’ (SDI), an inevitable need of the future. The project will provide a complete and transparent record of title in land and immovable property. Digitization of remaining parts of rural land, digitization of katchi abadi record, automation of sub-registrar record rooms is also part of the project.

#### **1.1. Beneficiary Country and Province:**

Islamic Republic of Pakistan and Punjab Province.

#### **1.2. Contracting Authority:**

Under the Punjab Urban Land System Enhancement (PULSE) Project and in agreement with the World Bank, the Project Implementation Unit (PIU), Punjab Land Records Authority (PLRA), Government of Punjab is the contracting authority.

### **2. OBEJECTIVE**

One of the core objectives of the PIU is to provide the analytical services and value-added information and solutions to Punjab Land Records Authority (PLRA) in Punjab and other users such as World Bank, donor organizations etc. in a manner that broadens and strengthens the digitization of land record on PLRA and maximizes the effectiveness of the Punjab Urban Land System Enhancement (PULSE).

The Android Developer will provide support to the PIU-PLRA, PULSE team in the development of mobile applications.

### **3. SCOPE OF WORK:**

- i. Develop Android applications for the Land Records Management Information System (LRMIS) with integrated GIS functionality.
- ii. Collaborate with the development team to design, develop, test, and deploy the mobile applications.
- iii. Implement user-friendly interfaces and intuitive navigation within the application.
- iv. Integrate GIS data and functionality to provide geospatial information related to land records.
- v. Ensure compatibility with various Android devices and versions, considering performance optimization and responsiveness.
- vi. Conduct thorough testing and debugging to identify and resolve application issues and inconsistencies.
- vii. Work closely with backend developers to integrate the mobile application with the existing LRMIS infrastructure.
- viii. Stay updated with the latest trends and best practices in Android application development and GIS technology.

- ix. Fully functional Android application for the Land Records Management Information System.
- x. Integrated GIS functionality within the application, allowing users to access and visualize geospatial data.
- xi. Well-documented source code with clear comments and instructions for future maintenance.
- xii. User documentation or manuals explaining how to navigate and use the application.
- xiii. Regular progress reports and updates.

#### **4. DELIVERABLES:**

The Consultant will submit monthly reports about the Terms of Reference (TOR).

#### **5. QUALIFICATIONS AND EXPERIENCE:**

- i. 16 years of education with Bachelor's or master's degree in computer science, Software Engineering, GIS or a related field.
- ii. Minimum 5 years of relevant verifiable experience.
- iii. Proficiency in Java and Kotlin programming languages for Android development.
- iv. Familiarity with Android Studio and other relevant development tools.
- v. Strong understanding of mobile application design principles, user experience, and interface guidelines.
- vi. Experience in integrating GIS functionality, such as displaying maps, spatial queries, and geolocation services.
- vii. Knowledge of GIS technologies, tools, and libraries, such as Google Maps API, OpenLayers, or Mapbox.
- viii. Understanding of land records management systems and associated data structures and workflows is a plus.
- ix. Familiarity with RESTful APIs, JSON, and data synchronization between mobile devices and servers.

#### **6. TYPE OF CONTRACT**

Time-Based Contract.

#### **7. ESTIMATED DURATION OF CONTRACT**

The duration of the contract is for a period of 1 Year (extendable).

#### **8. SELECTION METHOD**

The selection will be made in accordance with the Open Competitive Selection of Individual Consultants of World Bank Procurement Regulations for IPF Borrowers”, dated November 2020. The attention of interested Consultants is drawn to Section III, paragraphs, 3.14, 3.16, and 3.17 of the World Bank’s “Procurement Regulations for IPF Borrowers” dated July 2016 revised November 2017 and August 2018 (“Procurement Regulations”), setting forth the World Bank’s policy on conflict of interest.

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