Terms of Reference (TOR)
Individual Consultant for Development of the Software Components of InfoBhoomi in Applications of Geoinfor-Box: A Localized Spatial Data Infrastructure
(AHEAD/RA3/RIC/SUSL/FOG/CON/TOR 3-d)
InfoBhoomi Project (Grant No: AHEAD/RIC/STEM/HEMS/No. 24)
Faculty of Geomatics - Sabaragamuwa University of Sri Lanka

1. Background

1.1. About the Sector Strategy,

The development of the higher education sector is of central importance to enable Sri Lanka to make the transition from a Lower-Middle Income Country (LMIC) to an Upper Middle-Income Country (UMIC). Recognizing this, the Government of Sri Lanka (GoSL) and the World Bank have agreed to support the higher education sector through a Bank funded Accelerating Higher Education Expansion and Development (AHEAD) Operation.

1.2. Brief description of the AHEAD operation

Accelerating Higher Education Expansion and Development (AHEAD) Operation is organized into two components. The first is a Program Component that supports the national Higher Education Development Program. The second is the systems strengthening, capacity building, and technical assistance component that will assist GoSL to strengthen the higher education sector and achieve the objectives of the AHEAD program component. This second will also cover monitoring and evaluation, policy analyses, program coordination, and communication.

The implementing agency is the Ministry of education (MOE). The University Grants Commission (UGC) will coordinate the activities of the universities. There will be an Operations Monitoring and Support Team (OMST) which will coordinate and support all AHEAD activities between the MOE, UGC, and the universities.
AHEAD has three Results Areas:
Results Area 1: Increasing Enrolment in Priority Disciplines for Economic
Development Results Area 2: Improving the Quality of Higher Education
Results Area 3: Promoting Research, Development, and Innovation

The project InfoBhoomi, funded under AHEAD RIC grants, focuses on the development of localized Spatial Data Infrastructure (SDI) for supporting local governance processes. Local Government Authorities (LAs) are the primary tier of the governance system of Sri Lanka. LAs are responsible for the administration and regulation of matters relating to public health, utility services, thoroughfares, etc. Yet, the efficient delivery of public services by LAs is hindered due to weak capacity and limited resource availability. National Policy on Local Government 1632/26, 2009 aims to facilitate the transformation of LAs to effectively lead local development contributing to achieving national goals. Local data management for

evidence-based decision-making is a core aspect of this transformation.

The Faculty of Geomatics, Sabaragamuwa University of Sri Lanka (SUSL) in this context, plans to design a localized Spatial Data Infrastructure (InfoBhoomi) to integrate the local spatial databases into a single web-based environment and pilot it at the Municipality of Bandarawela. Reliable data from the local level will flow as inputs, as a result of increased capacities of data suppliers facilitated by the project to ensure effectiveness of the new data management system. A
knowledge-hub set up at the SUSL with the project commercial partner, will identify options for cost-effective data service provision and service provision based on business models to be considered by the municipality and related local service providers. The GeoinfoBox (A webGIS) will facilitate necessary linkages for solution development for the local problems identified, their nature and extent based on accurate data. Existing socially/environmentally viable solutions developed by the private sector and by NGOs/CBOs, especially those options that have track records of being used successfully elsewhere including internationally. Strengthened local data availability will also trigger R&D.

2. The objective of the Consultancy

The objective of this assignment is to develop a mobile application (for Android platforms) for the Web-GIS based Land Information System called InfoBhoomi.

3. Scope of the Consultancy
- Designing, developing, integrating, and maintaining Android Mobile app
- Doing necessary Application Programming Interface (API)/code to integrate with the existing web-based land parcel information system
- Requirements and technical design documents
- Developing software requirements specification (SRS) and documenting the development procedures, data flow diagram, and others
- Providing an application to run in any screen (mobile devices) resolution
- Developing test case design for conduct testing
- Any other requirement comes during development
- Regular Maintenance of the App
- Upload it on google play store and apple store and bear all fees and cost of uploading

4. Key tasks and related activities

The main duties and responsibilities of the Consultant in Designing Geo-Database will be to:

Key Task	Required Deliverable*	Time frame (after signing the contract)

1. An APK including screen designs and partial code implementations	● Logging Form ● Splash Screen ● Main Window "City Data Collector" Main window consists with below components. User Information This panel shows the profile of the user such as Name, Designation, and Institution as per the login response] User Location (Live view) This will be a Map, which shows the current (live) location of the Device. Function Buttons 1) View Map Layers This button navigates user to another screen. This shows set of WMS layers that the user is having access. 2) Edit Layers If user wishes to edit the Map (Change geographic boundaries) they need to go through this option. 3) Offline Actions Both front end and backend for the section would be developed.	At the end of the 4th week
2. API integration with web GIS-Platform	Following Deliverables should be made with API Integration ● Layer Editing View ● Layer Editing tools (Add/Delete lines, polygons, and points) ● API Integration with the databases associated with web-based land information systems ● GIS Functions	At the end of the 8th week
3. Quality Assurance, Improvements, and Training	● Error Corrections ● Enhancements ● Live testing ● Code Delivery ● App Publishing ● Training Programs	At the end of the 10th week

* In addition to the above the consultant should submit all diagrams, flow charts, application architecture, algorithms & codes etc., with respect to the deliverable assigned through this TOR.

5. Duration of the assignment

The contract will run for 10 weeks from the date of signing the contract.

6. Schedule of payment

The Consultancy fee will be paid according to the following schedule.

Basis of Payments	Percentage of Consultancy fee	Timeline
Evaluation of the progress of key task 1 ensuring completion of all deliverables up to the required standards	30%	End of the 4nd week
Submitting the deliverable of the key tasks 2 ensuring completion of all deliverables up to the required standards	30%	End of the 8th week
Submitting the deliverable of the key tasks 2 and 3 ensuring completion of all deliverables up to the required standards	40%	End of the 10^{th}week

7. Required qualifications & experience

- Educational qualifications- A degree in Information Systems or a relevant area
- Over 10 years' experience as an academic and/or professional in the relevant field, preferably with experience on facilitating data management for decision making and commercial applications with similar products.

8. Required professional competencies

- ability to carry out the key tasks effectively and efficiently
- ability to interact with senior academic and administrative staff in the university
- ability to function effectively in a team environment inspiring trust and cooperation of other team members
- ability to work efficiently, and to meet deadlines
- strong communication, negotiating skills and good interpersonal relations
- ability to speak, read and write fluent English, and assist in the production of project

reports in English

9. Method of Selection

Individual Consultant - Selection on Competition

10. Reporting the Deliverables

The consultant shall closely coordinate and report to the Coordinator/ Project InfoBhoomi.

In order to make payments, all the deliverables must be up to the satisfactory level of the project coordinator and team members of the InfoBhoomi project.

11. Conflict of interest

The Consultant is required to provide professional, objective, and impartial advice, at all times holding the Client's interests paramount, strictly avoiding conflicts with other assignments or its own corporate interests, and acting without any consideration for future works.

12. Ownership of the assignment

This assignment is funded by the Ministry of Education via AHEAD-OMST under the program component of AHEAD. As such, the University shall be the owner of the assignment and will reserve the Intellectual Property Rights for all deliverables of the assignment under the terms and conditions given in the IP policy of the University. The Consultant will have no right of claim to the assignment or its outputs once it is completed and no rights to use Data and Information gathered through the assignment for other purposes without written permission from
the Vice-Chancellor. Any Reports/ Data/ Information produced as a part of this assignment shall be handed over to the Client in soft and hard forms.

13. Confidentiality

The consultant should strictly adhere to the Confidentiality of InfoBhoomi project details including but not limited to its designs, know-how, architecture, and any information related to the project and confidentiality of stakeholder information and data obtained during the assignment and not divulge the same either directly or indirectly to any person or party.

14. **Submission of Proposals**

The prospective Consultants shall submit **sealed proposals in one original and a copy which include educational and/ or professional qualifications and experience in a detailed CV and the expected consultancy fee** to the Director, Operational Technical Secretariat, AHEAD Operations, Sabaragamuwa University of Sri Lanka, Belihuloya**on or before 2.30p.m. of December 27th** of **2022**.

Please mark **"Consultancy for Development of the Software Components of InfoBhoomi"** in the upper left-hand corner of the envelope.

Director,
Operational Technical Secretariat
AHEAD Operations,
Sabaragamuwa University of Sri Lanka,
Belihuloya