Accelerating Higher Education Expansion and Development (AHEAD) Operation

University of Moratuwa

REQUEST FOR EXPRESSIONS OF INTEREST
(Consultancy on Data Fusion Framework Development for facilitating data usage across multiple applications)
AHEAD/RA3/DOR/UOM/ENG/DSC/CON/TOR 01)

The Government of Sri Lanka has received financing from the World Bank toward the cost of the Accelerating Higher Education Expansion and Development (AHEAD) Operation and intends to apply part of the proceeds for consultant services. The **services include**;

- Identify the required and appropriate data-sources effectively.
- Pre-process data into an efficient standard format.
- Develop a data warehouse to store data coming from different sources.
- Implement a data extraction and query processing mechanism.
- Implement a data visualization platform.

The main duties and responsibilities of the Consultancy on Data Fusion Framework Development for facilitating data usage across multiple applications will be to:

Key Task		Required Deliverable
Data Fusion Framework	DW Tool	Implement Data warehouse management system and select suitable ETL tools.
	Data Lake	Implement a data lake to store raw data from different sources for use of data scientists (Satellite Data, Video Data, Bus Ticketing Data, Accident Data, Traffic Data, Parking Data, Goods Transfer Data, Land use Maps)
	OSRM Map Data	Collect OSRM map data.
	Map-based Data	Collect traffic data, POI, etc. data - Frequently collect traffic layer data - Collect POI data - Process traffic data based on corridors
	CDR Pre-processing	Process CDR data using Spark. - Filter user based on their spatial-temporal behavior - Identify load sharing effected record
	Mobile App data	Collect CDR, GPS, Survey and Travel purpose data.

		● Process CDR data based on their spatial-temporal behavior ● Analyze CDR, GPS, Survey and Travel purpose data
	HVS Data	Already collected data will be entered to the data warehouse
	Data processing	Data processing using Apache Spark. ● Identify user home/work location ● Analyze user travel behavior
	Data Warehouse	● Data integration ● Data warehouse management ● Data warehouse optimization
	API Implementation	APIs will be created for 3rd parties to input and extract data
Data Visualization Platform	Query Processor	Simple and intuitive query method will be implemented keep users in mind who have less knowledge in data processing.
	Report Generation	● Graph based Report Generation ● Heatmap based Report Generation
	Website	3rd party data visualization website

The **duration of the service is for 01 year from the date of signing the contract.**

The Director, Operations Technical Secretariat, AHEAD Project on behalf of the DataSEARCH, University of Moratuwa now invites eligible individuals to indicate their interest in providing the services. Interested individuals must provide information indicating that they are qualified to perform the services.

Required **Qualifications and Experience**:

- The individual involved in this project must possess a BSc (Hons) in Engineering or related higher education qualifications.
- Requires working experience in a related field.
- Expertise in Spark based big data analysis.
- Experience in data warehouse implementation and management.
- Prior experience in data mining related projects will be welcomed.

Required **Professional Competencies:**

- Sound communication skills.
- Ability to interact with academic and administrative staff in the university and undergraduates.
- Ability to coordinate and facilitate the implementation of processes and procedures.

- Ability to analyze and resolve implementation issues effectively.

A consultant will be selected in accordance with the procedures set out in the Government of Sri Lanka's Guidelines on Selection and Employment of Consultants-2007.

Interested consultants may obtain further information at the address below during office hours from 8.30am – 4.00pm.

Expressions of interest must be delivered or sent through registered post along with a CV in a sealed envelope to the address below, on or before 2.00 pm on 15th October 2020. The phrase "Consultancy on Data Fusion Framework Development for facilitating data usage across multiple applications AHEAD/RA3/DOR/UOM/ENG/DSC/CON/TOR 01" should be marked on the top left-hand corner of the envelope.

Attn:

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