



Global Health Technical Support for Global Public Health Data Innovation

Task Order: Enhance & Implementation of Data Centralization:

The scope of work for this project includes but not limited to enhancing to the existing central laboratory data repository, integrating with other systems, and implementing standardizations

Background on OpenLDR Central Laboratory Data Repository:

OpenLDR (<https://sites.google.com/site/openldr/home>) is a central laboratory data repository where electronic laboratory data from various laboratory data sources are stored. The OpenLDR allows laboratory managers and decision makers to easily view relevant data on the entire country, different geographic locations, and detailed data down to the laboratory facility and specific section.

OpenLDR is not a software package; it is a set of guidelines for implementing a centralized repository for laboratory related data, including a set of definitions to consolidate and report on data from multiple laboratories. A major design goal of the OpenLDR is to accommodate data from laboratories which use disparate Laboratory Information Management Systems (LIMS). The OpenLDR design specification can be implemented utilizing any relational database. While the design is “open” the data is not and is expected to be securely hosted by the aggregating organization (e.g. Ministry of Health).

Creation of tools in support of the OpenLDR

This project will create a set of downloadable tools surrounding the OpenLDR database which will allow information systems staff to be able to import and receive data from external sources, respond to electronic requests for data from external sources, monitor data flow activity, supply data to monitoring and surveillance tools as well as publish the data for use by dashboards and other analysis tools. The team will document all aspects of these tools, including the security requirements, installation, how to send and request data through these tools, monitoring data flow and view basic analyses of the data collected as well as techniques for more advanced analyses. In addition to supplying the tools, a structure will be put in place to coordinate communications between OpenLDR developers and keep systems up to date with the latest changes.

The tools are to be implemented as reference implementations. The design of these tools is intended to allow users to not only use the tools but also download the source code and freely modify as they see fit. The implementation design and code is intended to be easy to understand and be easily modified to fit each user’s needs. While some configuration will be part of the design, the intent is not to create a highly configurable tool but instead a set of source code easily adaptable to the user’s needs by providing easy to understand coding examples. Documentation on all aspects of the code, database structure and data management practices will be key.

The following tools are to be created

- Web API

- API Data Forwarding
- Data file import
- Data file extract
- Administrative Web UI
- Data flow monitoring Web UI
- Basic web-based data visualization
- Web form for submitting data to the OpenLDR

Development Assistance

Additional developers are needed to be integrated into the existing technical team. Tasks will include finalizing design documents, programming, user interface design and documentation regarding commonly expected modifications to the code.

The development tools will be based primarily on node.js framework. User interface design and development using HTML, CSS and Javascript will also be required for some of the tools. Multiple databases will need to be supported such as MySQL, MS SQL Server, PostgreSQL and others. Basic graphical visualization libraries will also be used. The database structure is complete but the core code architecture is still being designed. If any applicants already have a node.js structure that supports the tools listed it would help speed development; any code provided by the contractor would be integrated into the project and need to be freely modifiable and redistributable.

The expectation is that the contractor would work alongside the existing team to complete the work already initiated. APHL will provide the project management and the contractor will provide subject matter expertise. Contract will be expected to work across multiple time zones and it is likely the team will meet for a kick-off meeting for getting the team up to speed, discuss design strategies and start the development effort.

Submission:

The contractor is requested to submit a proposal (not exceeding 2 pages) that includes the following:

- Outline contractor's approach to this task
- Expected timeline to be following with key milestones,
- Resources to be committed by the contractor
- Requested budget allocation.

Please note this task order is being sent to several groups from the APHL GPHDI RFP

The deadline for this submission is August 31, 2023 to be submitted to hewan.moges@aphl.org.

The selected contractor will be notified by September 21, 2023.