

# Request for Quotes (RFQ):

**Laboratory Information System (LIS) for Indonesia Balai/Balai Besar Teknik Kesehatan Lingkungan dan Pengendalian Penyakit (B/BTKL-PP) laboratories**

Application Due Date: February 23, 2022

Submit to: [help.desk@idn.aphl.org](mailto:help.desk@idn.aphl.org)

*This project is supported by the Centers for Disease Control and Prevention (CDC) of the U.S. Department of Health and Human Services (HHS) as part of an award totaling \$6.8 million dollars (COAG #NU2HGH000080, CFDA #93.318). The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by CDC, HHS, or the U.S. Government. For more information, please visit [https://www.aphl.org/programs/global\\_health/Pages/default.aspx](https://www.aphl.org/programs/global_health/Pages/default.aspx).*

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## SUMMARY

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The Association of Public Health Laboratories (APHL) received funding through a cooperative agreement with the U.S. Centers for Disease Control and Prevention (CDC) to implement a laboratory information system (LIS) and central laboratory data management system at the Indonesian Balai Besar Teknik Kesehatan Lingkungan public health laboratories (B/BTKL-PPs) with support from the Indonesian Ministry of Health (MOH) surveillance program. Through a 2021 review of different LIS available in Indonesia, the MOH opted to use an open-source LIS, Elektronik Sistem Informasi Manajemen Data Terpadu (ESIMDADU).

The purpose of this RFQ is to solicit bids for an information technology team that will be responsible for configuring, customizing, implementing, training and maintaining on ESIMDADU, an open source LIS, at B/BTKL-PPs laboratories in Indonesia.

## BACKGROUND

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Working together with the Indonesia MOH, four laboratories were identified to implement Phase 1 of the LIS in Indonesia. The Phase 1 will provide objective information for development of a national plan for LIS implementation that addresses the technical, human resource, systems support, and financial issues for a LIS. The four laboratories selected for the Phase 1 project are BBTCL-PP Yogyakarta, BBTCL-PP Surabaya, BBTCL-PP Banjarbaru, and BTKL-PP Batam. The deployment will be expanded to remaining 6 B/BTKL in Phase 2.

LIS applications are laboratory-oriented, sample-centric as opposed to a patient-centric, patient management application. The primary purpose of the LIS application is to collect and manage laboratory test data, quality control data, inventory control data, standard operating procedures and training information within the laboratory.

ESIMDADU LIS is an integrated in-house environmental laboratory information management system (LIMS) developed by BBTCL Yogyakarta for environmental testing labs. BBTCL Yogyakarta is interested in extending deployment of ESIMDADU to the disease labs and the requirements gathering and development was initiated by CDC and APHL in collaboration with Indonesia MoH. The current system is being replicated by BBTCL-PP Palembang, BTKL-PP Medan and BTKL-PP Manado with plans to expand to other B/BTKLs. A gap analysis provides information relating to: 1) gaps and considerations for development of the ESIMDADU system to meet the laboratory workflow requirements of BBTCL Yogyakarta disease testing laboratories and functional attributes required to support quality laboratory testing protocols; and 2) the technical requirements and gaps identified as necessary for implementation of a central deployment of ESIMDADU LIS, including IT architecture, training, implementation plan and human resource recommendations. This gap analysis will serve as the guide to move forward.

This RFQ seeks to solicit offers from qualified information technology software teams with offices and operations in Indonesia to implement an LIS in 4 (four) B/BTKL-PP laboratories. Quotations should clearly state the plan and means for providing operational support on an on-going basis demonstrating the knowledge and capacity available. The project award may be written with an option for the successful company to continue to rollout the LIS to additional sites potentially including all 10 B/BTKL-PP laboratories. Through this RFQ, APHL requests a detailed budget for Phase 1 and high level estimation for

Phase 2 deployment. Phase 3 of this project will be planned pending budget availability. APHL expects to announce the successful vendor for this project by March 2022.

**Note:** Any solicitation or contact with APHL, CDC Indonesia, the Indonesia Ministry of Health or U.S. CDC employees involved in the LIS Phase 1 Project other than the designated Procurement Contact concerning this RFQ is **prohibited**, except as authorized by the Procurement Contact, during the period from date of release of the RFQ until the notice of intent to contract is released. Unauthorized contact concerning this RFQ may disqualify the respondent from participating in the RFQ process (may not be considered in the review of respondents).

## LIS PHASED DEPLOYMENT AND IMPLEMENTATION

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Deployment will occur in three phases and will include data exchange and electronic laboratory reporting. Applicants that have the ability to work with internationally recognized standards such as HL7 and utilize standard vocabulary code sets such as LOINC and SNOMED are preferred.

- Phase 1 will take place at four B/BTKL-PPs. This will involve:
  - Software development, configuration, customization and modification of ESIMDADU based on the requirements and gap analysis
  - Deployment and training on ESIMDADU at the Reception, Virology, Parasitology and Bacteriology Laboratory sections
  - Instrument interfacing between ESIMDADU and analyzers in Virology, Parasitology and Bacteriology
  - Pilot of data exchange/electronic laboratory reporting of patient level laboratory results and integrated with Indonesia Health Services platform stated on the blueprint plan for Health Technology Transformation.
  - Pilot of electronic test order and result (eTOR) between B/BTKL-PPs and selected high volume referring facilities e.g. laboratories and health center
- Phase 2 will deploy these 4 modules (Reception, Virology, Parasitology and Bacteriology) at 6 additional LIS B/BTKL-PPs.
- Phase 3 is expected to include expansion of the LIS to all areas of the 10 B/BTKL-PPs .

### PHASE I deliverables for this RFQ

- Implementation at B/BTKL-PPs using private cloud Central Database Deployment architecture
- Software development and customization of the ESIMDADU LIS software for use at the four Phase 1 sites
- Instrument Interfaces for automated laboratory analyzers at 4 B/BTKL-PPs
- Training super user, end user and administrator training
- Development of user manuals
- One (1) year of software support and maintenance post implementation (updates, patches, helpdesk etc.)

### Optional:

- Pilot of data exchange/electronic laboratory reporting of patient level laboratory results with surveillance/reporting systems
- Pilot of electronic test order and result (eTOR) between B/BTKL-PPs and referring facilities

## System Development and Central Database System Architecture

### *System Software development*

- The development of the ESIMDADU system should be performed following software development quality standards (e.g. CMMI); software development change documentation & testing; and considerations of the best development approach based on the blueprint plan of Digital Health Transformation Strategy 2024 published by the Indonesia MOH.
- Completion of ESIMDADU Virology, Parasitology and Bacteriology modules to support laboratory workflow and data management
- Development of interface engine for connection between ESIMDADU and Analytical Instruments
- Completion of Test result reports and Summary Reports

### *Deployment of Central Database System*

- The Data Security architecture should be designed for central deployment cloud solution
- The table architecture may have been designed for run a single LIS for a single laboratory. Consideration should be given to any requirements or changes to the table architecture to be able to run a single LIS instance for multiple laboratories. Consideration should also be given as to whether to run single LIS instance-database vs. Virtual Machines solution. Ideally as the system is developed and deployed as a central data solution, visualization and dashboards should be developed and an architecture and design implemented for data exchange and electronic laboratory reporting.
- The system will require computers, network hardware, printers and barcode scanners and label printers. For each laboratory (and laboratory section) computers are necessary for receiving, registration, laboratory technicians, supervisors and results retrieval.

## **Implementation and Deployment of ESIMDADU at four (4) Phase I sites**

### *Documentation*

- The following administration and user guides should be developed to support training and adoption of the system:
  - Installation and administration guide
  - Basic user guide
  - Super User guide
  - Operations and troubleshooting guide
  - Data dictionary

### *Training*

- Two levels of training are anticipated, one geared towards LIS Administrators and Super Users, and one geared towards end users.

### *Supportive Supervision*

- Minimum two weeks on site at each site after deployment and Go Live.

### *Technical Support and Maintenance*

- Software support and maintenance plans should be established for application updates and patches to the software following official installation. This could include helpdesk services and a plan and strategy for computer and network hardware maintenance and support.

## RFQ PROCESS OVERVIEW

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Respondents should bid a LIS application package that includes the PHASE 1 deliverables provided in the submission section by February 23, 2022.

Respondents selected as semi-finalists will be contacted by APHL for interviews and additional information between March 1 - 8, 2022.

A selection committee has been established and these individuals will be reviewing all material received from applicants.

Computer and network hardware procurement will be the responsibility of APHL. ESIMDADU will be made available to the selected team in Indonesia for localization and customization for the 4 pilot laboratories and training laboratory staff in the use of the application. Functional and technical specifications will be provided by MOH Indonesia and APHL.

Questions regarding technical and business (laboratory) requirements described in this RFQ must be directed in writing, via email to: [help.desk@idn.aphl.org](mailto:help.desk@idn.aphl.org)

## DURATION OF AWARDS

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The initial award will be made through September 29, 2022. Any subsequent awards will be made during the following financial year for APHL's cooperative agreement with CDC.

## ELIGIBLE APPLICANTS

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This RFQ solicits offers from software providers with offices and operations in Indonesia that can deploy the LIS in Bahasa Indonesia and provide maintenance and support in Bahasa as well.

## PROGRAM EXPECTATIONS

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### **Staff Qualifications**

The respondent must provide a project team organizational chart, followed by resumes of key personnel that will be assigned to the project. Each key personnel must be an employee of the respondent or be identified as a subcontractor. Include roles, responsibilities and estimated time allocated for each key personnel.

When the contract is awarded, the deliverables and the level of efforts of each role (full time equivalent/FTE workload) will be finalized.

Specific expectations and skills required from vendors and their staff are listed in [Appendix A References](#).

Respondents should include a list of clients, organizations or institutions that can be used as references. Selected references may be contacted to determine the quality of work performed, competency of

personnel assigned to the project, vendor responsiveness, etc. The results of the reference checks will be provided to the evaluation team and may be used in scoring the written proposal.

These references should be capable of verifying information supplied by the respondent. The data required for each reference includes:

- Company Name
- Physical address
- Contact person name, e-mail, address, phone number
- Product developed/configured
- Dates of Implementation

## RFQ SUBMISSION

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Responses must be sent to APHL by e-mail attachment in MSWord or PDF format (electronic signatures accepted) to [help.desk@idn.aphl.org](mailto:help.desk@idn.aphl.org). E-mail attachment is the preferred means of receipt. E-mail responses must be received at the APHL office by 5 pm WIB (Western Indonesia Time zone)/6 am Eastern time (U.S) on Feb 23, 2022. Submitters will receive a confirmation of receipt of their proposal by APHL. APHL may terminate or modify the RFQ process at any time during the response period.

Responses that are not received by the stated deadline shall be determined to be non-responsive and at APHL's discretion may not be considered in the review of respondents. There are three parts of the review for the award of this contract by APHL.

### **Vendor information required to be included with response.**

1. Details of the LIS provider (1 page)
  - Full legal name and if LIS provider has a "doing business name" the d/b/a as well.
  - Authorized representative of the Contractor for the proposal.
  - Telephone, fax and e-mail address of the single point of contact for communication between APHL and the LIS provider. Contact information for other persons whom the LIS provider may request informational copies sent in addition to the single point of contact.
  - Business mailing address.
2. Management Proposal (2 pages max)
  - Vendor organizational structure
  - Project management knowledge, skills and experience as relates to this project
  - Qualifications to meet project management and computer programming requirements listed in Appendix A
  - Background and experience working with any open source tools/products
3. Technical proposal (3 pages max)
  - Experience working with LIS products including development, implementation and training
  - Discussion of ability to integrate LIS with analytical instruments and other software applications, such as Electronic Medical Record systems, surveillance systems, disease reporting systems
4. Key personnel (2 pages max)
  - Ability to provide staffing personnel as listed in Appendix A

- Provide a single point of communication to ensure all parties are knowledgeable of the implementation plan and its progress
5. Implementation plan (2 pages max)
- Estimated timeline and roles to be allocated to the following high level activities
    - Gap Analysis and Prioritization
    - Establish Change Control Process
    - Customization of LIS software
    - Developer Testing
    - Data Migration and Localization
    - ESIMDADU LIS User Training
    - Systems Administrator Training
    - Installation of LIS at one location
    - Instrument Interfaces
    - Go Live
  - Outline steps that will be taken to ensure project is on time and within budget
6. Cost Proposal (1 page): The Respondents should bid a LIS application package that includes the PHASE 1 deliverables listed below taking into consideration the expected roles of a core team of individuals assigned to this project. The detailed skills and responsibilities of each of the core team are provided in Appendix A
- Staff cost matrix of position, description, qualifications, and hourly/daily/monthly rate charged.  
The core team includes:
    - Project manager
    - System analyst
    - Database administrator
    - UI/UX designer
    - Programmer (front end)
    - Programmer (back end)
    - Software tester
  - Itemized costs should be provided for the below list of PHASE I deliverables
    - Software development and customization of the ESIMDADU LIS software for use at the four Phase 1 sites
    - Deployment and Implementation at B/BTKL-PPs using cloud based central deployment solution
    - Instrument Interfaces for existing instrumentation at 4 B/BTKL-PPs
    - Training super user, end user and network administrator training (if applicable).
    - Development of user manuals
    - One (1) year of software support and maintenance (updates, patches, helpdesk etc.)
  - Estimated cost for optional development
    - Pilot of data exchange/electronic laboratory reporting of patient level laboratory results with surveillance/reporting systems
    - Pilot of electronic test order and result (eTOR) between B/BTKL-PPs and referring facilities

#### **Appendix**

- Additional information may be provided in an appendix if needed but not to exceed 5 pages in addition to the page limit listed above



## TRAVEL

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APHL will be responsible for travel costs related to project implementation and will finalize these with the selected vendor before signing of final contract, including travel and daily allowances. Any travel costs associated with responding to this RFQ will not be APHL's responsibility.

## EVALUATION OF RESPONSES

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### Initial Review

#### Part One:

APHL reviews all responses received by the response deadline, assesses the responses with the Indonesia MOH & CDC-Indonesia and compares them to the requirements stated in the RFQ.

One or more providers are selected to be included in Part Two of the RFQ review process. Applications that do not meet the minimum requirements of the RFQ may not be included for consideration in Part Two due to weaknesses in the noted criteria compared to other applications. Respondents to the RFQ should address all noted criteria.

#### Part Two:

APHL will require respondents selected for the Part Two review to answer questions through an interview process with the Indonesia MoH, CDC-Indonesia and APHL related to their project plan, staffing and costs.

#### Part Three:

After consideration of the information provided in the RFQ, the Selection Committee shall select the preferred respondent.

The final contract will be carried out between APHL and the vendor. The selected vendor must be able to contract with APHL.

### Evaluation Team

- Indonesia Ministry of Health – Representatives from Pusat Data dan Informasi (Pusdatin), Digital Transformation Office (DTO), developers of ESIMDADU
- APHL – Staff and experts from Global Health team

### Evaluation Criteria

Specific evaluation criteria for selecting vendor are listed in Appendix B

## TERM OF PROJECT

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March 2022 to September 29<sup>th</sup>, 2022. The term of the project may change based on APHL's legal review process. APHL will inform selected vendors of any delay as soon as possible.

## AWARD ANNOUNCEMENT

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APHL will inform selected and non-selected applicants of the award decision on **March 15th, 2022**. APHL will post a list of selected programs on APHL's procurement website, [www.aphl.org/rfp](http://www.aphl.org/rfp).

All applicants will be entitled to utilize APHL's RFQ Appeals Process to formulate an appeal regarding alleged irregularities or improprieties during the procurement process. Specific details of this policy are located on the procurement website.

## CONDITIONS OF AWARD ACCEPTANCE

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The eligible applicants must be able to contract directly with APHL or have an existing relationship with a third-party organization that can contract directly with APHL on behalf of the applicant.

## DISCLAIMER AND OTHER GENERAL MATTERS

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This RFQ is neither an agreement nor an offer to enter into an agreement with any respondent. Once evaluation is complete, APHL may choose to enter into a definitive contract with the selected RFQ applicant(s).

APHL must ensure that the selected applicant(s) are neither suspended nor excluded from receiving federal funds and that the applicant(s) meet any other funding eligibility requirement imposed by the Cooperative Agreement. APHL's determination of whether the applicant is eligible to receive Cooperative Agreement funding will be definitive and may not be appealed. In the event that APHL determines that the selected applicant(s) is ineligible to receive Cooperative Agreement funding, APHL will nullify the contract or will cease negotiation of contract terms.

Each applicant will bear its own costs associated with or relating to the preparation and submission of its application. These costs and expenses will remain with the applicant, and APHL will not be liable for these or for any other costs or other expenses incurred by the applicant in preparation or submission of its application, regardless of the conduct or outcome of the response period or the selection process.

## APPENDIX A: REQUIREMENTS

### GENERAL EXPECTATIONS

- Vendors will be required to assign workload on this project to a core team of individuals whose responsibilities would be at least 75% devoted to this project.
- Individuals assigned to this project must be available to participate in hands-on training of the software.
- The project will require presence of the provider in Yogyakarta and in other Indonesia locations to ensure standardized and concurrent implementation in different regions as the project evolves.
- Preferred but not required experience in dealing with health care systems, including hospitals, clinics, physicians and laboratories.
- Experience in the localization and internationalization of software.

### MANAGEMENT AND PROJECT KNOWLEDGE AND SKILLS

- Experience gathering and documenting functional/user requirements, documenting user interfaces, and translating requirements into technical specifications for programmer use.
- Experience developing effective test plans and test cases, ensuring that test cases are traceable to requirements, and ensuring that software works as designed.
- Experience working with complex relational databases and extensive SQL knowledge.
- Excellent oral and written communication skills; and the ability to effectively communicate both internally and with external partners. For those who are assigned directly to the project, moderate comprehension of spoken and written English is important.
- Experience working collaboratively with internal or external partners.
- Very detail-oriented, as well as the ability to see the big picture.
- Experience estimating project tasks, and tracking and communicating project status and issues.
- Preferred but not required experience working with laboratory systems, or in a similar environment.
- Experience working on complex projects and complex systems, as well as open-source solutions.
- Experience with designing and developing web-based systems, and good understanding of web development architecture.
- Experience designing/developing data intensive web applications and reusable and maintainable program modules.
- Experience with database conversions

### STAFF EXPECTATION AND SKILLS

ROLE	SKILLS/RESPONSIBILITIES
<b>Project Manager/Lead</b>	<ul style="list-style-type: none"><li>• A single point of communication to ensure all parties, including Pusdatin, Digital Transformation office (DTO), Surveillance Subdirectorate at MOH, CDC Indonesia and APHL are knowledgeable of the implementation plan and its progress and of the needs of the vendor to proceed with implementation according to the plan.</li><li>• Works closely with MOH ESIMDADU Lead to ensure development and implementation is in line with MOH requirements and expectations</li><li>• Coordinate, oversee and/or assist in the ESIMDADU implementation.</li><li>• Document all issues, changes, and resolutions throughout the implementation.</li></ul>

	<ul style="list-style-type: none"> <li>• Work with LIS Technical Working Group to schedule and perform a post-installation analysis and present the results of that analysis to the LIS TWG with written documentation.</li> <li>• Obtain signoff signifying completion of the implementation process.</li> <li>• Present a maintenance and support plan to LIS TWG and explain the 24/7 user support process. Document the process.</li> <li>• Work with LIS TWG on post-installation issues and changes.</li> <li>• Document all issues and resolutions.</li> <li>• Work with LIS TWG to evaluate the implementation, make required changes and propose plans for expansion, along with schedules and costs.</li> </ul> <p>Expected skills and knowledge</p> <ul style="list-style-type: none"> <li>• Team management - be able to move team together, delegate responsibility, handle conflicts.</li> <li>• Time management - create project timeline, maintain project lifecycle.</li> <li>• Risk management - implement risk mitigation strategies as needed.</li> <li>• Manage project budget and track costs.</li> <li>• Be able to use project management tools (e.g. MS Project) and methodologies e.g. agile, SCRUM.</li> </ul>	
<b>Systems Analyst</b>	<ul style="list-style-type: none"> <li>• Conduct analysis of existing systems</li> <li>• Work closely with representative from Digital Transformation Office (DTO) and Pusdatin</li> <li>• Identify future project needs</li> <li>• Conduct research on technology trends related to project development</li> <li>• Develop system design</li> <li>• Train users and create system manuals</li> <li>• Prepare system analysis reports</li> </ul> <p>Expected knowledge</p> <ul style="list-style-type: none"> <li>• MS Office</li> <li>• Structured Query Language (SQL)</li> <li>• System Administration</li> <li>• Programming Language (PHP, FW Laravel, Javascript)</li> <li>• Unified Modelling Language (UML)</li> </ul>	<ul style="list-style-type: none"> <li>• Conduct analysis of existing systems</li> <li>• Work closely with representative from Digital Transformation Office (DTO) and Pusdatin</li> <li>• Identify future project needs</li> <li>• Conduct research on technology trends related to project development</li> <li>• Develop system design</li> <li>• Train users and create system manuals</li> <li>• Prepare system analysis reports</li> </ul> <p>Expected knowledge</p> <ul style="list-style-type: none"> <li>• MS Office</li> <li>• Structured Query Language (SQL)</li> <li>• System Administration</li> <li>• Programming Language (PHP, FW Laravel, Javascript)</li> <li>• Unified Modelling Language (UML)</li> </ul>
<b>Database Administrator</b>	<ul style="list-style-type: none"> <li>• Analyze and select appropriate database</li> <li>• Designing database structure</li> <li>• Conducting database system testing</li> <li>• Optimizing the database</li> <li>• Migrate/upgrade database</li> <li>• Evaluate database usage</li> <li>• Perform database backups</li> <li>• Create database management reports</li> </ul> <p>Expected knowledge:</p> <ul style="list-style-type: none"> <li>• MS Office</li> <li>• SQL (MySQL, Postgrge SQL) Sever &amp; Client</li> </ul>	

	<ul style="list-style-type: none"> <li>• Operating System (Linux, Windows)</li> <li>• Database Backup Tools</li> </ul>	
<b>UI/UX Designer</b>	<ul style="list-style-type: none"> <li>• Conduct UI/UX evaluation of ESIMDADU</li> <li>• Designing user flow with the system analyst</li> <li>• Designing system interface</li> <li>• Conduct minor trials before testing production</li> <li>• Make improvements to UI/UX features based on test results and system evaluations</li> <li>• Perform UI/UX Design backups during the project</li> <li>• Generate UI/UX management reports</li> </ul> <p>Expected knowledge:</p> <ul style="list-style-type: none"> <li>• Design Application (CorelDraw, Adobe Photoshop, etc)</li> <li>• Programming Language (HTLM, Javascript Cascading Style Sheets (CSS))</li> <li>• Repository Tools (Asana, Bitbucket)</li> </ul>	<ul style="list-style-type: none"> <li>• Conduct UI/UX evaluation of ESIMDADU</li> <li>• Designing user flow with the system analyst</li> <li>• Designing system interface</li> <li>• Conduct minor trials before testing production</li> <li>• Make improvements to UI/UX features based on test results and system evaluations</li> <li>• Perform UI/UX Design backups during the project</li> <li>• Generate UI/UX management reports</li> </ul> <p>Expected knowledge:</p> <ul style="list-style-type: none"> <li>• Design Application (CorelDraw, Adobe Photoshop, etc)</li> <li>• Programming Language (HTLM, Javascript Cascading Style Sheets (CSS))</li> <li>• Repository Tools (Asana, Bitbucket)</li> </ul>
<b>Programmer (Front End)</b>	<ul style="list-style-type: none"> <li>• Writing code based on the results of UI/UX Design</li> <li>• Conduct minor trials before production</li> <li>• Perform feature improvements based on trials and system evaluation (front end)</li> <li>• Optimizing system coding (front end)</li> <li>• Migrate/upgrade coding from old system to new system (front end)</li> <li>• Perform software code backups during the project (front end)</li> <li>• Generate program code management reports</li> </ul> <p>Expected knowledge:</p> <ul style="list-style-type: none"> <li>• Programming Language (HTLM, Javascript Cascading Style Sheets (CSS))</li> <li>• Operating System (Linux, Windows)</li> <li>• Repository Tools (Asana, Bitbucket)</li> </ul>	<ul style="list-style-type: none"> <li>• Writing code based on the results of UI/UX Design</li> <li>• Conduct minor trials before production</li> <li>• Perform feature improvements based on trials and system evaluation (front end)</li> <li>• Optimizing system coding (front end)</li> <li>• Migrate/upgrade coding from old system to new system (front end)</li> <li>• Perform software code backups during the project (front end)</li> <li>• Generate program code management reports</li> </ul> <p>Expected knowledge:</p> <ul style="list-style-type: none"> <li>• Programming Language (HTLM, Javascript Cascading Style Sheets (CSS))</li> <li>• Operating System (Linux, Windows)</li> <li>• Repository Tools (Asana, Bitbucket)</li> </ul>
<b>Programmer (Back End)</b>	<ul style="list-style-type: none"> <li>• Build software by writing the code</li> <li>• Conduct minor trials before testing production</li> <li>• Perform feature improvements based on trial results and system evaluation</li> <li>• Optimizing system coding</li> <li>• Migrate/upgrade coding from old system to new system</li> <li>• Perform software code backups during project period</li> </ul>	<ul style="list-style-type: none"> <li>• Build software by writing the code</li> <li>• Conduct minor trials before testing production</li> <li>• Perform feature improvements based on trial results and system evaluation</li> <li>• Optimizing system coding</li> <li>• Migrate/upgrade coding from old system to new system</li> <li>• Perform software code backups during project period</li> </ul>

	<ul style="list-style-type: none"> <li>• Generate program code management reports</li> </ul> <p>Expected knowledge:</p> <ul style="list-style-type: none"> <li>• Programming Language (PHP, HTML, FW Laravel, Javascript)</li> <li>• Content Management System (CMS)</li> <li>• SQL (MySQL, Postgrge SQL)</li> <li>• Operating System (Linux, Windows)</li> <li>• Repository Tools (Asana, Bitbucket)</li> </ul>	<ul style="list-style-type: none"> <li>• Generate program code management reports</li> </ul> <p>Expected knowledge:</p> <ul style="list-style-type: none"> <li>• Programming Language (PHP, HTML, FW Laravel, Javascript)</li> <li>• Content Management System (CMS)</li> <li>• SQL (MySQL, Postgrge SQL)</li> <li>• Operating System (Linux, Windows)</li> <li>• Repository Tools (Asana, Bitbucket)</li> </ul>
<b>Software Tester</b>	<ul style="list-style-type: none"> <li>• Testing application features that have been made both pre and post production related to bugs, errors, coding, feature functions and application performance</li> <li>• Provide feedback to the technical team based on trials/tests</li> <li>• Generate a feature test report</li> </ul> <p>Expected knowledge:</p> <ul style="list-style-type: none"> <li>• MS Office</li> <li>• Database knowledge and skill</li> <li>• Programming knowledge and skill</li> <li>• Communication</li> </ul>	

## APPENDIX B. EVALUATION CRITERIA

Criteria:	Maximum Points	Comments
<b>General profile</b>	15	
<ol style="list-style-type: none"> <li>1. Located in Yogyakarta or Indonesia</li> <li>2. Time allocated to this project</li> <li>3. Experience in LIMS development</li> <li>4. Experience in health care system</li> </ol>		
<b>Project Management</b>	10	
<ol style="list-style-type: none"> <li>1. Experience gathering and documenting functional/user requirements, documenting user interfaces, and translating requirements into technical specifications for programmer use.</li> <li>2. Communication skills:               <ol style="list-style-type: none"> <li>a. Oral and written communication skills;</li> <li>b. Effectively communication with partners.</li> <li>c. Comprehension of spoken and written English.</li> </ol> </li> <li>3. Collaboration with internal or external partners.</li> <li>4. Very detail-oriented, as well as the ability to see the big picture.</li> <li>5. Project planning, problem solving, monitoring and evaluation</li> </ol>		
<b>Staff expectation – Meets Requirements</b>	10	
<ol style="list-style-type: none"> <li>1. Project Manager/Project lead</li> <li>2. System analyst</li> <li>3. Database Administrator</li> <li>4. UI/UX Designer</li> <li>5. Programmer (Front End)</li> <li>6. Programmer (Back End)</li> <li>7. Software Tester</li> </ol>		
<b>Additional Requirements</b>	4	
<ol style="list-style-type: none"> <li>1. QA/QC</li> <li>2. Stock management</li> </ol>		
<b>Instrument Interfacing</b>	6	
<ol style="list-style-type: none"> <li>1. Instrument interfacing</li> </ol>		
<b>Training</b>	15	
<ol style="list-style-type: none"> <li>1. User Training Plan</li> <li>2. Post-installation user training if any</li> <li>3. Building of local capacity</li> </ol>		
<b>Implementation</b>	15	
<ol style="list-style-type: none"> <li>1. Project plan</li> <li>2. Maintenance and technical support plan</li> <li>3. Communication plans for project</li> </ol>		
<b>Technical Architecture</b>	25	
<ol style="list-style-type: none"> <li>1. Web-oriented technology</li> <li>2. Central deployment approach</li> <li>3. Relational database</li> <li>4. Programming language</li> <li>5. Standardized QRIS code</li> <li>6. System creates audit logs</li> </ol>		
<b>TOTAL POINTS FOR VENDOR</b>	100	

APPENDIX C: APHL CONFLICT OF INTEREST DISCLOSURE STATEMENT (FOR COMPLETION BY REVIEWERS ONLY – APPLICANTS DO NOT NEED TO COMPLETE)

Association of Public Health Laboratories  
Conflict of Interest Disclosure Statement

**Applicability:** Disclosure of the following information is required of all Officers, Directors, committee members, staff members and other volunteers who have been designated and who have accepted responsibility to act on behalf of APHL ("APHL Personnel"). Please answer the following questions and, where indicated, include the same information for your immediate family members (your parents, your spouse or partner, your children and your spouse/partner's parents).  
APHL will keep your completed disclosure statement in the corporate records of the association.

1. Please list the name, address, phone number, email address and type of business of your current employer. If you are self-employed, please note that below and provide us with the address, phone number, email address and type of business you operate.

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Do you, or does any family member, currently serve as an officer, director, committee member, or other volunteer (or work as an employee of or a paid consultant to) any organization serving the interest of laboratory science or public health laboratories other than APHL or your state or local laboratory?

Yes  No

If yes, please list the organization(s) and provide detail on your or your family member's interest or position in the organization(s).

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Do you, or any family member, have an existing or potential interest in, or compensation arrangement with, any third party providing goods or services to APHL, or with which APHL is currently negotiating?

Yes  No

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If the answer is yes, please provide the name of the organization below and describe in detail the nature of the position held.

4. Please note any other financial or business interest you may have with any organization serving the interests of public health laboratories.

**If you have none, please check this box:**

Do you, or does any family member, have any other interest or affiliation that is likely to compromise your ability to provide unbiased and undivided loyalty to APHL, or that could come in conflict with your official duties as an Officer, Director, committee member, staff member or other volunteer who has been designated and who has accepted responsibility to act on behalf of APHL?

**Yes**  **No**

If you answered yes, please describe in detail below the nature of each such interest or affiliation.

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6. If you are currently aware of any actual or possible conflict of interest that might otherwise hamper your ability to serve APHL to your best ability and with the highest degree of care, loyalty and obedience – including any potential conflict you or a family member may have with one or more of the RFQ applicants – please describe them in detail below.

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For Review Only

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7. Do you agree that so long as you are an Officer, Director, committee member, staff member or other volunteer who has been designated and who has accepted responsibility to act on behalf of APHL you will immediately disclose to the other Directors and/or Officers or, for staff members, the Executive Director and/or General Counsel the nature of any interest or affiliation which you may hereafter acquire, which is in or is likely to become in conflict with your official duties with APHL?

**Yes**

**No**

**YOU MUST READ THIS SECTION AND THEN SIGN BELOW**

I acknowledge that I have received and read APHL's Fiduciary Responsibility and Conflict of Interest Policy (the Policy). I have listed all my relevant fiduciary responsibilities and affiliations, and I have identified any actual or potential conflict of interest on this Disclosure Statement and I agree to abide by the Policy. I understand that it is my responsibility to inform APHL in writing of any change in circumstances relating to the Policy and this Disclosure Statement.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_

# APHL Fiduciary Responsibility and Conflict of Interest Policy

## 1. Policy Statement and Purpose

The members of the APHL Board of Directors understand the importance of serving APHL to the best of their ability and with the highest degree of obedience, loyalty and care. Accordingly, the Board adopts the following policy for APHL Officers and Directors, all staff, committee members, and other volunteers who have been designated and who have accepted responsibility to act on behalf of APHL ("APHL Personnel").

## 2. Individual Duty and Annual Disclosure

APHL Personnel will avoid any conflict of interest with APHL. APHL Personnel will not profit personally from their affiliation with APHL, or favor the interests of themselves, relatives, friends or other affiliated organizations over the interests of APHL. As used in this Policy, "Conflict of interest" includes any actual, apparent, and potential conflict of interest.

Upon commencing service with APHL, each APHL Personnel will file with the Board an annual statement disclosing all material business, financial, and organizational interests and affiliations they or persons close to them have which could be construed as related to the interests of APHL or the profession of public health laboratory science. Each APHL Personnel has an obligation to make an additional disclosure if a conflict of interest arises in the course of the individual's service to APHL, whether arising out of his/her employment, consulting, investments, or any other activity. These disclosures will be documented promptly in writing and recorded in the Board minutes and corporate records.

## 3. Procedure

Whenever APHL considers a matter, which presents an actual, apparent, or potential conflict of interest for APHL Personnel, the interested individual will fully disclose his/her interest in the matter, including the nature, type, and extent of the transaction or situation and the interest of the individual or that individual's relatives, friends or other affiliated organizations. The Board, after consultation with counsel as appropriate, will determine whether an actual and material conflict exists and, if so, what is the appropriate course of action under this policy and the Board vote will be recorded in the minutes.

Any Board member having a conflict of interest must either (i) voluntarily abstain from and be disqualified from participation in all deliberation and voting on all Board actions relating to the situation or matter that gives rise to the conflict of interest, or (ii) ask the Board to determine whether an apparent or potential conflict of interest is considered by the Board to be an actual and material conflict.

In the event that the Board member in question requests that the Board evaluate the apparent or potential conflict, that Board member will abstain and be disqualified from participating in (and voting on) the determination of whether the issue presents an actual and material conflict. If the Board determines that an actual and material conflict exists, the Board member in question will abstain from all voting on, and will be disqualified from participation in all deliberation concerning all Board actions relating to the conflict of interest. The vote will be recorded in the minutes.

These procedures will neither prevent the interested individual from briefly stating his/her position on the matter, nor preclude him/her from answering pertinent questions of Board members, since his/her knowledge may be of assistance to the Board's deliberations.

APHL Personnel must be cautious and protective of the assets of APHL and insure that they are used in the pursuit of the mission of APHL. The association's policy requires APHL Personnel to avoid transactions in which APHL personnel may have a significant financial interest in any property which APHL purchases, or a direct or indirect interest in a supplier, contractor, consultant, or other entity with which APHL does business. The Board, after consultation with counsel as appropriate, will determine whether an actual and material conflict exists and, if so, determine whether the transaction is nonetheless favorable to APHL before considering whether to approve it.

#### 4. Other Duties and Obligations

Whenever any APHL Personnel discovers an opportunity for business advantage which is relevant to the activities of APHL, the opportunity belongs to APHL and the individual must present this opportunity to the Board. Only once the Board determines not to pursue the matter and relinquishes the opportunity may the individual consider it a matter of possible personal benefit.

APHL Personnel may not accept favors or gifts exceeding \$75.00 from anyone who does business with APHL.

All APHL Personnel will keep confidential those APHL matters designated confidential. APHL Personnel are prohibited from disclosing information about APHL to those who do not have a need to know or whose interest may be adverse to APHL, either inside or outside APHL, and are prohibited from using in any way such information for personal advantage to the detriment of APHL.

All APHL Personnel who participate in APHL activities, including committee activities and international consultation activities, must be adequately prepared to fully participate as their position descriptions require and will do so in accordance with the applicable laws and regulations of their respective state or territory and APHL's Articles of Incorporation, Bylaws, and corporate policies. The APHL Board will read and understand the association's Articles of Incorporation, Bylaws, corporate policies and financial statements, and routinely verify that all state, federal, and local tax payments, registrations and reports have been filed in a timely and accurate manner.

Board members will never exercise authority on behalf of APHL except when acting in meetings with the full Board or the Executive Committee or as authorized by the Board. If any member of the Board has significant doubts about a course of action of the Board, he or she must clearly raise the concern with the Executive Director and the Board and, when appropriate, seek independent expert advice.