

# Synthesized Responses to Questions: RFA 2020-001 HIV Case Surveillance System Development

**Bidder Questions: Black**

**PATH Responses: Blue**

## Scope of Work

- Timeline
  - Based on the overall work expected, the timeline seems very tight (Feb 2021 > Aug 2021). Is the timeline flexible?  
  
Response: Unfortunately, PATH does not have space to negotiate the timeline. All work must be completed by August 2021.
- **Page 2. Scope of Work:** *“To achieve this objective, the vendor may need to provide support and feature development in HIV Info.”* Questions:
  - Can you please share any reference material on Technology Architecture/ Stack of HIV Info and what options does it provide for Interoperability (REST API, FHIR)?  
  
Response: The current HIV Info stack will be augmented with a new stack, HIV Info CBS, implemented by the selected partner. The current HIV Info stack has limited export functionality (e.g., Excel sheets), which we will need to use during a transition phase for data synchronization until the new HIV Info CBS stack is ready to receive data from the point-of-service systems.
  - What is the expected scope of feature development/support needed for HIV Info? Is the scope just interoperability with Case Reporting System for Data Exchange or more?  
  
Response: Yes, interoperability with the Case Reporting System is the current expected scope, with perhaps small functional improvements to facilitate the data exchange.
- Client registry, facility registry, terminology
  - Are the “Client Registry”, “Facility Registry” and “Terminology” already developed or is it part of the development?  
  
Response: Reference OpenHIE solutions for a Client Registry (e.g., SanteMPI or OpenCR), Facility Registry (e.g., GOFR), and Terminology Services (e.g., OCL) should be considered for utilization by the vendor as necessary to meet project implementation needs.
  - If not, which technology is advised for each of them?  
  
Response: PATH advises the selected vendor to use the best technology applications available. PATH requires open-source technology applications, with the exception of PowerBI.
  - If not, are those developments part of the timeline?  
  
Response: Yes, the selected vendor will be required to support the remaining developments as part of this RFA scope of work.

- Patient unique identifier algorithm
  - Is the “patient unique identifier algorithm” already existing? Or is it part of the development?  
 Response: The “patient unique identifier algorithm” is part of the development.
- Laboratory system
  - Is it already known which lab system will have to be connected?  
 Response: The pilot will be undertaken by LabConn - LIS.
- Workstream 1
  - Is there any customization to be done in the external systems or do we just have to extract data related to HIV CS and normalize it?  
 Response: In general, we will not be doing any customizations of the external system. Instead, we would like to use the system’s existing APIs or data export mechanisms. In case no such mechanisms exist, we may need to create a specialized view of the database schema for export of relevant CS data.
  - In total 5 mediators will need to be developed for the following systems: HIV Info, OPC Assist Online, eClinica, HTC-eLog and HIV IMS. Is this assumption correct?  
 Response: The mediators are collected from some data formats (e.g., Excel, CSV, json, XML, or Web API).
  - Do all the data reporting systems have an API available?  
 Response: No, most of the systems have not provided an API.
  - Could you please specify which data reporting system are open-source and which one are closed and related to a commercial company?  
 Response: Most of the systems are developed by local companies and use open-source code and data. Some of them use Microsoft SQL for data (LabConn - LIS).
- Phase II
  - What is meant by “Provide administration through system monitoring and management services.”? Could you please elaborate?  
 Response: Administration accounts will be assigned to staff at different levels (national, provincial, district, and commune) and different facility types (voluntary counseling and testing, confirmatory laboratory, outpatient clinic).
- Phase III
  - “Support the integration of additional HIS system source as appropriate.” Could you please elaborate about the HIS system source?  
 Response: In addition to the above-mentioned HIS systems, other HIS systems are being developed by VAAC or by projects such as DHIS2 (for Recency), HMED, PDMA, etc. It is important to find opportunities to integrate these systems when possible.
  - Are you speaking about HTC-eLog and HIV IMS - or other systems?  
 Response: Yes.

- Technical Instructions: “This work plan should include illustrative results and describe specific interventions to achieve those results.”

- What do you mean by “illustrative results”?

Response: “Illustrative results” are supposed to serve as examples of the outputs you expect your interventions to achieve under this scope of work.

## Responsibilities

- Section B. Responsibilities – context and purpose: you mention the selected candidate will “Work with CS Technical Working Group (TWG)”.

- Which staff will be available to collaborate?

Response: The Case Surveillance TWG will include staff from VAAC, NIHE, Pasteur Institute, and PATH.

- Will developers from VAAC or PATH be working with the selected company?

Response: PATH is not doing the development, but we will provide business analysis and technical assistance, and monitor the provider that is selected. PATH can also connect the selected company to appropriate technical resources, developers, and community platforms associated with the referenced software tools.

- Coordination

- The workstreams are linked to each other. How will the TWG coordinate the project if different companies are selected for different workstreams?

Response: If different companies are selected for different workstreams, then they will all participate in the TWG and PATH will help coordinate.

- Application process

- Can we apply to one topic in particular inside a workstream or do we have to apply for the workstream in its entirety? (ex.: in the workstream 1 we could propose the development of the mobile application).

Response: A partner can apply for one or more of the workstreams. If applying for a particular workstream, they must complete the entire scope (all topics) within that workstream.

- Eligibility

- Do you confirm that a private company can apply and that this RFA is not only restricted to NGOs?

Response: We confirm that a private company may apply; this RFA is not restricted to NGOs.

- Can an Indian/US company apply for the bid? Do we need a Vietnamese registered office?

Response: Applicants are not required to be based in Vietnam but should be able to communicate and coordinate closely with Vietnam-based stakeholders.

- Project background

- “The vendor(s) will be expected to work collaboratively with several technology partners based in and outside of Vietnam to enhance existing case reporting workflows to support public health CS

of HIV in Vietnam". **Question:** Can you please share some examples/use-cases where the vendor is likely going to need interactions with other tech partners? The ones that come to our mind are:

- For Data Source: Coordinate with owners of various systems which will act as data source into the Case Reporting System.

Response: The data source is managed by the government. We can provide samples to develop the tool for government staff working on the real data.

- For other workstreams: Coordinate with vendors who own other workstreams in case there are multiple vendors who are awarded the project.

Response: We will review the applications to decide whether we will award one vendor all the workstreams or make multiple awards.

- Are there any other use-cases/examples for cross-vendor/team technical interaction?

Response: The intent of this question is unclear to us.

- **EMRs:** The existing EMRs and solutions in place seem to be: eClinica, OPC Assist, MPI, ePMS, etc. Can you please confirm and provide a list of the EMRs in the ecosystem -- and any documentation which speaks about technical integration options for each (REST API, adaptors, HTTP concerns, etc.). This will help in estimating the integration efforts for each EMR / source system type.

Response: The HIV EMRs that you mention do not have any data format standard or information exchange standard. The purpose of the new system is to handle the jobs of those systems and to plan to replace them.

## Deliverables

- **Digital Signature:** Is supporting a Digital Signature by health providers, users, etc. part of scope of this system - for approval/verification of some reports, etc.? If yes, is there any existing technical documentation on Digital Signature service provider and integration options.

Response: We do not plan to apply Digital signature at this time.

- **Performance Expectations:** Will you be able to provide a rough estimate of expected data volume (daily/weekly/monthly) coming in from the source systems which will help us understand performance expectations of the Normalisation/Reporting system. It would be even more helpful if it provides a range for today's expected load and then overall expected load across all provinces.

Response: The estimation of concurrent users is 350. We have 90,000 patients in total. The estimation of new records per day is 500.

- **Cloud Hosting:** With regards to Kubernetes-based hosting, is there a specific cloud provider that you prefer or are already using - like AWS, Azure, GCP or a hybrid/private cloud like RedHat OpenShift, or Pivotal Cloud Foundry, etc? If using a private cloud/datacenter, can you please provide some details on its technical offerings for hosting/monitoring Kubernetes based services.

Response: The vendor should provide options for Kubernetes hosting (or on-premises) in their application that are compliant with government of Vietnam legal and policy frameworks. The PATH team can help support discussion on appropriateness of proposed solutions with VAAC.

- **Deduplication:**

- Can you share additional technical documentation which explains the Data Model and API Integration options for Client Registry & Master Patient Index -- as we expect to integrate with these systems for de-deduplication jobs. The RFP provides reference to the PRIM standard & mCSD for data interchange (FHIR based). Besides that, are there any other resource materials which explain the APIs & Data Model of the registry services? For instance, how is security/authentication expected to be handled while communicating to these registry services (e.g HTTPs)? Is there a sandbox environment that will be available?

Response: The vendor should be using the OpenHIE architecture in general and the referenced standards (e.g., PRIM) specifically. Data models should be based on HL7 FHIR. There are a number of open-source implementations of FHIR with online demos that can be used in addition to the Instant OpenHIE platform. Security should follow best practices (e.g., Audit Trail and Node Authentication [ATNA]), which is part of OpenHIM). Https should be expected and Let's Encrypt should be a default provider of keys.

- Is biometric (fingerprint) ID based deduplication also in scope? If so, can you provide API/technical documentation around how biometrics are currently being validated?

Response: Biometrics should be planned for as part of the available data used for human adjudication of potential duplicate records (e.g., comparison of photographs). Vendors should suggest standards-based approaches for automated adjudication.

- **Page 8. Deliverables:** Could you please provide us more details on these two points. What is the expected scope/deliverable for this?

- “*Applied Face recognition eKYC (Know Your Customer) for patient registry.*” Cause of many duplication record and no unique ID applied the eKYC is the technology applied to recognized the customers.

Response:

- “*Applied barcode for service order transfer letter*” this is applied to (de-identification the patient information when they are using services from screening to diagnostics and treatment, should only authenticated user can read clear text info of patient).

Response:

- **Page 4. Workstream 2:** As per the requirement document, the Case Report Registry needs to integrate with OpenELIS and LabConn for HIV Lab results. Can you provide any guidance or reference documentation on preferred integration options with LabConn?

Response: LabConn is a laboratory information system that uses the CRUD method as Web API. We should work with the technical working group to define the value/indicator we have to exchange.

- **Page 4. Workstream 3:**

- Can you provide some examples of the visualizations / reports expected?

Response: This is under discussion, but it is about 30 to 35 graphs and charts and ten reports following MOH/VAAC circulars 02 and 09.

- Is PowerBI (proprietary) the chosen tool that everyone uses or are their other tools also in use, like R, or Metabase (open-source)?

Response: We prefer to use PowerBI plus open-source tools.

- **ElasticSearch:** It appears that ElasticSearch is the recommended service for storing data in the Data Mart. There have been very recent changes to ElasticSearch licensing announced here: [License Change \(official\)](#) and some consider taking a relook at the license with respect to its usage: [ElasticSearch & Kibana are business risks](#). This may not apply to Vietnam public systems which are open-source but would be good to validate with appropriate legal authorities. Meanwhile, is ElasticSearch/Kibana a finalized choice, or may we also suggest alternatives if you are open to considering.

Response: Applicants should utilize ElasticSearch as part of their solution, leveraging the fhir2es connector between HAPI and ElasticSearch (<https://github.com/intrahealth/fhir2es>). Note, more documentation on this connector is forthcoming. Open-source alternatives to Kibana (e.g., Grafana) can be considered, but the solution should have a loose coupling between Elastic Search and the chosen open-source Business Intelligence (BI) tool. It should also enable support for connections to PowerBI, Tableau, or other BI tools.

- **Terminology Service:** The RFP mentions SVCM standard for data interchange with terminology service. Is there any additional technical integration document / API documentation for clinical terminology service - with regards to REST API endpoints, security(authentication), etc. for the Terminology Service?

Response: The Sharing Value Sets and Concept Maps (SVCM) profile can be found here: [https://www.ihe.net/uploadedFiles/Documents/ITI/IHE\\_ITI\\_Suppl\\_SVCM.pdf](https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_Suppl_SVCM.pdf). It contains messaging requirements for the relevant FHIR API endpoints.

- **Page 5. Single Sign-On:** Is there an existing Single-sign on preference already in place (like SAML/OpenID), with libraries/packages in place to be consumed as part of the build phase, or would it be in the scope to introduce a SSO infrastructure across the full architecture stack for this project and others related projects to also consume.

Response: Currently, there is no preferred SSO solution. The solution for Vietnam is expected to be generalized and made available to the larger OpenHIE community. It is expected that the selected vendor will work with the OpenHIE community, specifically the DevOps sub-community, to review SSO options, which will work across the Instant OpenHIE components.

<https://wiki.ohie.org/display/resources/DevOps+Subcommunity+Calls>.

- **Programming Stack:** The RFP mentions Vue.JS as a preferred front-end stack. Are there any preferences for the backend (microservices/jobs/etc.)? We are assuming Java is preferred (and python is second preference). It will be helpful to get this information.

Response: There is no preferred back-end software stack. For ETL processes used to normalize data from the source systems, the vendor would be expected to develop an OpenHIM mediator. While OpenHIM itself is written in node.js, mediators can be developed in a suitable language of the vendor's choice. Suitability can include considerations such as the robustness of FHIR support libraries.

- **System Monitoring/Management:** Are there already preferred tools for monitoring & alarming in place, on top of which we will be expected to integrate, or as part of the scope, we are also expected to introduce and deploy suitable monitoring tools (open source) like Prometheus?

Response: There are no preferred tools, and the vendor should provide recommendations. It is suggested that the selected vendor work with the OpenHIE community, specifically the DevOps sub-community, to review monitoring options within Instant OpenHIE.

<https://wiki.ohie.org/display/resources/DevOps+Subcommunity+Calls>.

- **Page 8. Android App:** “*Mobile (Android) case reporting data capture application using the Google FHIR Android Structured Data Capture library*”:

- Can you provide some more details on use-cases/feature expectations from this Mobile Application?

Response: The initial scope of the application is quite limited; it is to provide an electronic means for health workers with limited network access to submit case report forms. The case report forms will be defined in terms of FHIR Questionnaires, and the application should send case reports into the central case report repository.

- Is this the library being suggested in RFP by google (<https://github.com/google/android-fhir>)?

Response: Yes, this is the correct SDK.

- Would you be open to other tech options which allow for Mobile data collection while uploading data in FHIR compatible format (using libraries like this for example: <https://hapifhir.io/hapi-fhir/docs/android/client.html>)?

Response: Other platforms may be considered if used in conjunction with the SDK.

- **Nightly Jobs:** Is there a requirement for having nightly job runs which create reports for all registered users and email them links/reports as PDF, Excel, etc.?

Response: The capability of sending routine reports should be available within the system.

- **Operating System:** Is there any preference in terms of operating system for running production & Test servers - Ubuntu, CentOS, etc. (besides the ones running on Kubernetes)?

Response: Currently, there is no preference for server operating system as long as it aligns to VAAC policy. PATH will help support discussions with VAAC as to appropriate choices.

- **Language/Internationalization Support:** We assume that Vietnamese and English are the locales to be supported by all the platform components for the UI and Data Import/Processing/Analytics considerations. Are there any other Internationalization considerations in scope?

Response: No.

- **Accessibility Standards:** Are there any specific accessibility standards/requirements in scope (example the W3C WCAG AA standard)?

Response: No.

## Business Questions / Process

- What is the current process of case reporting?

Response: A case is managed from diagnosis (confirmed cases) until death with many sentinel events, such as recency, CD4 count, ARV initiation, and co-morbidities with TB and hepatitis B and C.

- Who are all the stakeholders for each of the workstream?

Response: Health workers at different levels (national, provincial, district, commune) and at different facility types (voluntary counseling and testing, laboratory, outpatient clinic).

- Who are the user personas?

Response: Health workers at different levels (national, provincial, district, commune) and at different facility types (voluntary counseling and testing, laboratory, outpatient clinic).

- What has been experimented and not worked in the past?

Response: We have not yet experimented.

- How many users will be using the system in each province?

Response: There are approximately 300 users in each province.

- Do each of the provinces use the same system currently for case reporting from which data normalization and migration will be done?

Response: Yes.

- What are the compliance requirements from the security stand - GDPR / HIPPA?

Response: None.

- What is the larger identity management strategy?

Response: The national health insurance ID (and national ID) will be used for identification.

- How huge is the dataset?

Response: The current system is managed by VAAC and we could not measure it.

- How many transactions are expected?

Response: The question is not clear. What types of transactions did they mention?

- Is there internet connectivity available in all the centers (in all provinces)

Response: Yes.

- What is the governance structure for the program?

Response: The MOH of Vietnam is still developing the governance structure, and it is not available at this time.

- Given there are several integration touch points and stakeholders, who would be managing the overall program of work?

Response: This work will be managed by PATH under the guidance of CDC.

- What are the other parallel streams of work ongoing during each phase?

Response: The parallel streams of work are the workstreams as discussed in the RFA. In particular, development of the ETL process from data sources to the FHIR Questionnaire standard can happen in parallel with the development of the central case report repository.

- What are the project tracking tools used / preferred?

Response: Any tracking tool is okay to use. There is no preference.

- Are the other teams working using Agile Methodologies ?

Response: The teams behind the referenced software tools (e.g., OpenHIM, Android FHIR SDK) use agile methodologies to manage their own projects, but particular approaches are not being required by this RFA. The applicant should describe their approach.