Development of a National Electronic Immunization Registry for Malawi

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Contents

Acronyms

AEFI	adverse events following immunization	ICT	information communication technology
BID	Better Immunization Data	IOL	interoperability layer
CHW	community health worker	LMIS	Logistics Management Information System
CRVS	civil registration and vital statistics	MOH	ministry of health
CV	Curriculum vitae	OpenHIE	Open Health Information Exchange
DAK	Digital Adaptation Kit	OSI	open source initiative
DIPC	Digital Innovation in Pandemic Control	RFP	request for proposal
eHIN	electronic health information network	SMART	Standards-based, Machine-readable, Adaptive, Requirements-based, Testable
FHIR	Fast Healthcare Interoperability Resources	SURD	systems and user requirements document
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit	USAID	United States Agency for International Development
HL7	Health Level 7	VPD	vaccine preventable diseases
HWIS	Hospital Wide Information System	WHO	World Health Organization
iCHIS	integrated Community Health Information System		

Request for proposal number: #2023-042

For: Development of a National Electronic Immunization Registry for Malawi

1. Request for proposal schedule

Activity	Date and time
Request for proposal (RFP) released	Fri, Aug 25, 2023
Deadline for fact-finding questions	Fri, Sep 1, 2023
PATH to respond to fact-finding questions	Thu, Sept 7, 2023
Confirmation of interest in submitting a proposal	Friday, Sept 15, 2023
Deadline for submission of proposal in response to the RFP	Friday, Sept 22, 2023
Award decision (to be followed by contract negotiations)	Fri, September 29, 2023

Note: PATH may change the dates at its discretion. Changes will be communicated to those who confirmed their intent to submit a proposal.

2. PATH statement of business

PATH is a global nonprofit dedicated to achieving health equity. With more than 40 years of experience forging multisector partnerships, and with expertise in science, economics, technology, advocacy, and dozens of other specialties, PATH develops and scales up innovative solutions to the world's most pressing health challenges. Learn more at www.path.org.

Digital Square is a PATH-led initiative funded by the United States Agency for International Development (USAID), the Bill & Melinda Gates Foundation, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), and a consortium of other partners. Digital Square is a global mechanism that coordinates investments into smart, scalable health technology solutions and creates an environment in which they can be sustained.

A historic lack of coordination in digital health has resulted in an imbalanced, disorganized marketplace where available tools and investment mechanisms do not match the long-term needs of countries or communities. To accelerate health equity through the development, adoption, scale, and delivery of digital health innovations, Digital Square focuses on creating better alignment and coordination. Digital Square brings partners together to improve how the global community designs, uses, and pays for digital health tools and approaches. Digital Square works with innovators to advance adaptable, replicable tools that are designed to work together seamlessly. Digital Square works with governments and country-based

technology experts to strengthen local capacity to implement and manage digital health programs. Digital Square works with donors to identify new ways to invest that ensure long-term success and align with countries' priorities.

By strengthening the coordination among these partners, Digital Square reorients the market to better match tools and approaches to the needs of countries and communities. Digital Square brings technical, operational, and advocacy expertise to address well-recognized barriers to scaling digital health. These strong partnerships across the sector allow Digital Square to identify barriers faced in different areas of the marketplace and collectively design new approaches to overcome them. Our work is divided into three key areas: (1) alignment and co-investment, (2) global goods, and (3) regional and country systems.

3. Contracting requirements

3.1 The contracting authority shall be PATH or any one of its affiliates either directly or on behalf of operations countries or programs.

3.2 The commercial contracting terms and conditions will be negotiated with the successful supplier toward the end of the selection process.

3.3 By submitting a proposal, the supplier confirms that they will abide by the RFP terms and PATH policies, especially our Code of Ethics (https://www.path.org/about/code-ethics/), and general good practices regarding inclusivity, diversity, fair trading, health and safety, records management, anti-fraud and corruption, and environmental policy, among others.

3.4 Duration of the contract to complete development is five months.

4. Solicitation terms and conditions

4.1 **Notice of nonbinding solicitation:** PATH reserves the right to reject any and all bids received in response to this solicitation and is in no way bound to accept any proposal.

4.2 **Confidentiality:** Suppliers shall treat all information provided by PATH as part of this solicitation as confidential. If any information is inappropriately released, PATH may seek appropriate remedies as allowed under applicable law.

4.3 **Conflict of interest disclosure:** Suppliers bidding on PATH business (also referenced herein as "bidders") must disclose, to the procurement contact listed in the RFP, any actual or potential conflicts of interest. Conflicts of interest could be present if there is a personal relationship with a PATH staff member that constitutes a significant financial interest, a board membership, other employment, or ownership or rights in intellectual property that may conflict with the supplier's obligations to PATH. Suppliers and PATH are protected when actual or perceived conflicts of interest are disclosed. When necessary, PATH will create a management plan that provides mitigation of potential risks presented by the disclosed conflict of interest.

4.4 **Acceptance:** Bidder's submission of a proposal means the bidder accepts all terms and conditions set forth in the RFP. PATH's acceptance of a proposal does not mean acceptance of its terms and conditions. PATH reserves the option to negotiate on the final terms and conditions. We additionally reserve the right to negotiate the substance of the RFP finalists' proposals, as well as the option of accepting partial components of a proposal if appropriate.

4.5 **Right to final negotiations:** PATH reserves the option to negotiate on the final costs and final scope of work and reserves the option to limit or include third parties in such negotiations at PATH's sole and full discretion.

4.6 **Third-party limitations:** PATH does not represent, warrant, or act as an agent for any third party because of this solicitation. This solicitation does not authorize any third party to bind or commit PATH in any way without our express written consent.

4.7 **Proposal validity:** Proposals submitted under this RFP shall be valid for at least 90 days following the date the proposal is due. The validity period shall be stated in the proposal submitted to PATH.

4.8 **Limitation of liability:** The terms and conditions set forth in this RFP do not exclude or limit the liability of PATH or the supplier in relation to fraud or in other circumstances giving rise to liability under any applicable law.

4.9 **Tender costs and liability:** Bidders are responsible for obtaining all information necessary for preparation of their proposal and for all costs and expenses incurred in preparation of the proposal. Subject to the "Limitation of liability" section in this RFP (section 4.8), the bidder accepts by their participation in response to this RFP, including without limitation the submission of the proposal, that it will not be entitled to claim from PATH any costs, expenses, or liabilities that it may incur in tendering a response to this RFP, irrespective of whether their proposal is successful.

4.10 **PATH's variation or termination rights:** PATH reserves the right to vary or terminate this RFP process with written notice to all suppliers from which it has received proposals. It is intended that this solicitation process will take place in accordance with the provisions of this RFP, but PATH reserves the right to terminate, amend, or vary (to include, without limitation, in relation to any time scales or deadlines) the solicitation process by notice to all suppliers from which it has received proposals. Subject to section 4.8, "Limitation of liability," PATH will have no liability for any losses, costs, or expenses caused by its termination, amendment, or variation to this RFP.

4.11 **Joint venture or consortium or subcontractors:** Any lead supplier that submits a proposal in response to this RFP takes responsibility and accountability for enforcing the RFP requirements set forth herein among the members of the joint venture or consortium, and each of their advisers, subcontractors, and staff.

4.12 **Payment and invoicing:** PATH will pay correctly addressed and undisputed invoices within 30 days. Suppliers shall ensure comparable payment provisions apply to payments to their downstream parties. Advance payment is not preferred. If an advance payment is envisaged and is other than industry or country known practice, such must be made clear in the financial proposal to PATH.

5. Instructions for responding

5.1 **PATH contacts:** All communications regarding this solicitation shall be directed to the contacts below. Contacting third parties involved in the project, the review panel, or any other party may be considered a conflict of interest and could result in disqualification of the proposal. All documents required as part of the proposal must be submitted to the contacts listed by the deadline for submission:

Technical contact: Linda Taylor, ltaylor@path.org

Program contact: Tori Matus, vmatus@path.org
Procurement contact: Celeste Gonda, cgonda@path.org

- The subject line of all emails regarding the proposal should read: RFP #2023-042 Your Company Name.
- Please see Annex A to this RFP, "Tips on proposal preparation and submission," for additional details regarding the files and file types to be included in your proposal package.

5.2 **Confirmation of interest:** Please send a statement acknowledging receipt of this solicitation and your intent to respond or not respond no later than the date noted in the schedule in section 1. Send the confirmation to the contacts listed above.

5.3 **Selection of short list:** PATH reserves the right to select a short list from the bids received. PATH has the option to interview and discuss specific details with those candidates who are short-listed.

6. Background, purpose, and scope

The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and PATH's Digital Square initiative are partnering with ministries of health to support countries to innovatively select and adapt digital tools. By doing so, countries can better navigate the complexities of pandemics and strengthen routine immunization systems through the Digital Innovation in Pandemic Control (DIPC) project.

The DIPC project is enhancing existing digital systems as part of an immunization product suite aligned with the World Health Organization's (WHO) digital adaptation kits (DAKs). DAKs are part of WHO's standards-based, machine-readable, adaptive, requirements-based, and testable (SMART) Guidelines initiative and include data and health content consistent with WHO's healthcare recommendations, generically applicable to digital systems that countries are adopting. The DIPC project is collaborating with ministries of health in Ghana, Malawi, and Tanzania to localize the system and user requirements for immunization to suit their needs. The localization of the DAKs will help to ensure that a country's digital systems are created in line with WHO guidelines, to support increased adherence to clinical standards. To ensure sustainability, the DIPC project plans to train key personnel in the ministries of health and members of the health workforce in the three implementation countries on the use of SMART Guidelines, DAKs, and immunization product suites to strengthen and sustain digital immunization systems.

Definition of a product suite

Digital Square defines a product suite as a **configuration of open source technologies and tools that are aligned to meet a functional domain** (such as immunization, antenatal care, etc.) **and support standards-based data exchange.** A product suite packages digital tools together and exchanges data through appropriate patterns to achieve a desired set of functionality and outcomes. A product suite leverages international guidance documents, such as WHO DAKs, to frame the expected system-wide flows and functionalities.

A product suite must meet defined functional and nonfunctional requirements to ensure all major functional areas are catered to and essential nonfunctional needs are considered.

A product suite must support appropriate standards-based data exchange to achieve a fully interoperable solution. Data exchange should be enabled through adherence to globally recognized standards with the Open Health Information Exchange (OpenHIE) specified workflows where relevant. Health Level Seven

(HL7) Fast Healthcare Interoperability Resources (FHIR) is the preferred open standard, and work on product suites should reference and contribute to the development of WHO L3 work.

A product suite must comprise recognized global goods and/or technologies that meet the definition of a global good.

Conceptually, product suites are modular by design to:

- Leverage existing infrastructure and tooling.
- Build on prior investments in digital health software products.
- Allow software components to be replaced or upgraded/updated as needs evolve over time.
- Promote re-use and adoption by other countries/projects.

In addition, although each product suite focuses on a particular health program area (in this case immunization), product suites are envisioned to have the ability to link to other health program areas in an effort to support integration across primary health care services.

By supporting the development of product suites that are responsive to country's needs, Digital Square believes this will enable scale-up of interoperable digital systems that comply with WHO guidelines and accelerate the implementation of standards-based architectures.

Digital Square at PATH is soliciting proposals from qualified vendors/consortiums to develop a national immunization registry for Malawi that will meet the requirements as defined in the Immunization Product Suite System and User Requirements Document (SURD)[1] in Annex B. This document is derived from the Better Immunization Data (BID) project conducted by PATH and is informed by WHO's digital adaptation kits (DAKS) and resources of WHO's standards-based, machine-readable, adaptive, requirements-based, and testable (SMART) guidelines initiative.

Information detailed in the Immunization Product Suite SURD reflects generic workflow processes, data elements, and decision-support algorithms and describes linkages to related services for immunization, such as civil registration and vital statistics (CRVS), facility registry, client registry, inventory management, appointment scheduling, and reminder generating. The immunization registry requirements are intentionally generic, and any proposed solution must be developed so that it can be contextualized to local policies and requirements. While the initial requirement is for components that meet the basic needs of the immunization use case, the solution should also have the capability to evolve to support additional use cases as Malawi expands its digital infrastructure and as its technical capacity expands and matures.

Given the conceptual modular approach and emphasis on adaptation or re-use of existing tools, it is expected that the successful applicant(s) will be **a single vendor or consortium of vendors who will collaborate to develop the interoperable workflows and produce an integrated immunization registry that can be demonstrated and that is testable and deployable.**

Guidance on country engagement

This RFP is not intended to fund implementation activities; it is focused on developing an initial version of a digital immunization registry that demonstrates the potential to be implemented within the country's Hospital Wide Information System (HWIS) in Malawi being built on the below technology:

- Schema: OpenMRS version 1.7.0
- Frontend: React JS
- Business Logic: Ruby on Rails

[1] This RFP is just for Malawi and there are other RFPs being solicited to address needs in Ghana and Tanzania for the DIPC project.

- Microservices: To be developed on preferred open source languages.

Applicants are encouraged to draw on their knowledge and experience working with in-country teams and existing systems, to leverage their **existing** relationships with stakeholders in **Malawi** to better understand the current challenges with regard to digitization of immunization services, and to seek guidance as to the priority needs of the Malawi Ministry of Health (MOH).

6.1 **Scope of work/terms of reference/specifications:**

The five workflows that together make up the end-to-end immunization workflow are listed below, together with their main functions:

- Create awareness and generate demand. This feature must have a turn on and turn off ability for the SMS alerts option
    - Send appointment reminders to client/caregiver.
    - Send appointment reminders to community health worker (CHW).
    - Send reminders re: missed vaccination to client/caregiver.
    - Send reminders re: missed vaccination to CHW.
      Optional extension
    - Send birth notification to CRVS system.
- Plan and manage immunization service delivery.
    - Configure vaccination schedule and business rules for decision-support.
    - Provide decision-support for immunization event.
    - Facility identity management: provides ability to query, retrieve, create, and update the facility registry.
- Administer immunizations and document care.
    - Record data for preimmunization screening.
    - Record data for immunization events.
    - Schedule appointments.
    - Generate vaccination certificates.
    - Record data for adverse events related to immunization.
    - Produce lists of vaccinations due for planning purposes.
    - Produce lists of missed vaccinations for follow-up.
    - Perform vaccination events de-duplication at facility level.
    - Perform vaccination events de-duplication at centralized level (if applicable).
    - Patient identity management**:** provides ability to query, retrieve, create, and update the Master Patient Index for new and existing patients.
    - Support patient record de-duplication and perform patient matching and linking/unlinking.
- Integrate with and manage immunization inventory.
    - Check stock levels of vaccines and related supplies.
    - Record stock used.
    - Record stock damaged/wasted/disposed.
    - Order stock of vaccines and related supplies.
    - Update stock when received.
    - Manage inventory of vaccines and related supplies.
    - Manage distribution of vaccines and related supplies.
    - Manage cold chain for vaccines.
- Data analysis and reporting (monitor and evaluate).
    - Provide the ability to access and analyze data to improve immunization program decision-making, through the generation of reports and dashboards that are routinely needed by immunization providers and other partners.

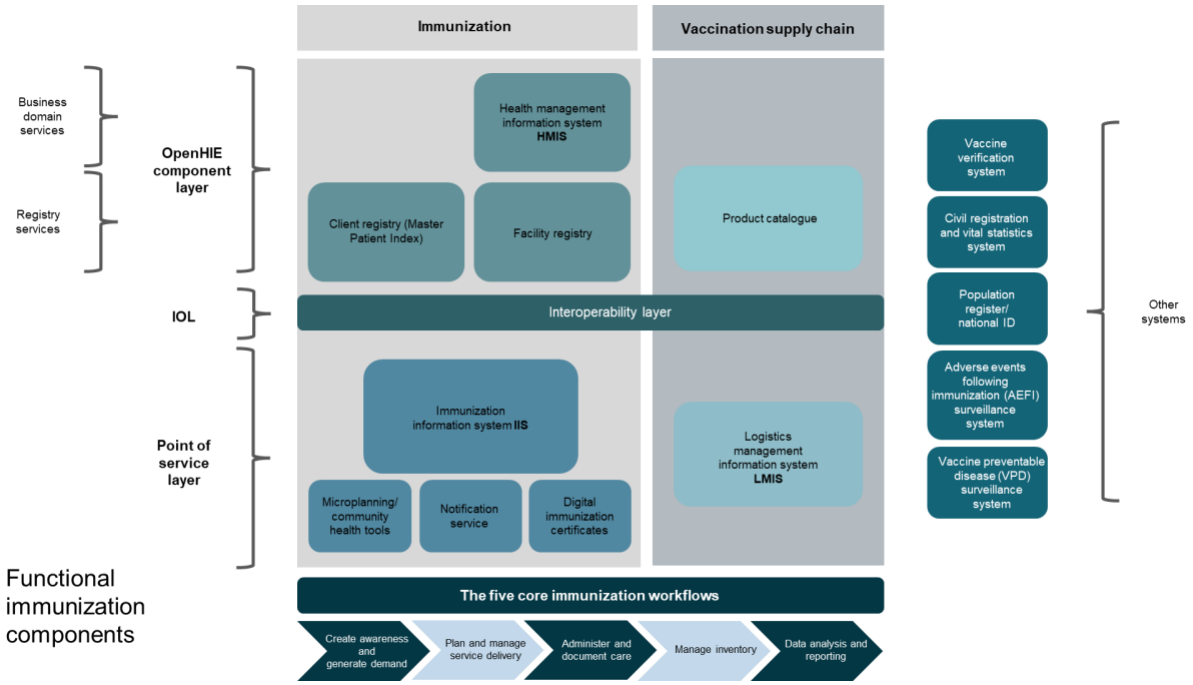

Figure 1. Functional immunization components.
Acronyms: IOL – interoperability layer, OpenHIE – open health information exchange

Figure 1 shows a functional view of the components of the immunization product suite aligned with the OpenHIE architecture. For the purposes of this RFP, the functional components within the gray box in Figure 1 labeled as Immunization are the core functions included in-scope and detailed in the SURD in Annex B.

While the SURD does not include detailed requirements for the immunization supply chain workflow, the applicant should demonstrate an understanding of how the other components may interface with the logistics management information system (LMIS) and showcase any existing work that is relevant or that can be expanded upon.

All other functional components shown in the diagram are representative of how the immunization product suite could be extended in later phases to support additional use cases.

The immunization registry will build on the opportunities that were identified during the immunization digital ecosystem mapping workshop conducted in July 2023. For the immunization registry to be truly effective, it will need to interoperate with other systems within the landscape and therefore any work proposed that will advance efforts towards development of interoperability workflows between the immunization registry of the HWIS and the following systems will be advantageous:

- Identity management.
    - Linkage to national ID systems and population registers for verification of identifiers.
    - Demographics data exchange.
- Master health facility registry.
- OpenLMIS and Electronic Health Information Network (eHIN) for vaccine inventory data.
- Integrated community health information system (iCHIS) for information on clients that have been vaccinated in their communities.

Linkages to more systems will be advantageous. These include, but are not limited to:
- Digital verifiable vaccine certificates.
- Vaccine-preventable diseases (VPD) surveillance systems.

- Vaccine track and trace systems.
- Health worker registry.
- Adverse events following immunization (AEFI) surveillance systems.
- National product catalogue.
- One Health Surveillance platform.
- DHIS2.

The proposed solution is expected to address and encompass the following technical scope:

The primary output is a national immunization registry developed as a module within the HWIS that will provide a fully functional digital solution that meets the requirements detailed in the immunization registry and SURD in Annex B, and which may be adapted to meet the needs of multiple countries. The immunization product suite must be able to be demonstrated to nontechnical and technical audiences.

Characteristics relating to the immunization registry should address:

- All software components should be developed and available within the HWIS.
    - The system will be developed on web and mobile platforms and include dashboards.
    - The system must have a bulletin board that is suitable for Smart TV displays.
- All software components should be available under an open source initiative (OSI) approved open source license.
- Development for all software components must be completed within a five-month period.
- All documentation (e.g., user guides, test cases) should be available under an appropriate Creative Commons license, allowing the users to adapt and translate the materials for the local context.
- For any data exchange workflows, the proposed solution should be conformant with the OpenHIE interoperability framework and must use open standards that are appropriate for the context and that consider legacy systems. In alignment with WHO's SMART Guidelines Level 3, the use of FHIR is strongly preferred. For the immunization commodities supply chain, the use of GS1 standards is preferred.
- The solution must provide documented evidence of the quality assurance framework used and results of testing.
- The expectation is that the development phase will include aspects of agile processes, namely regularly scheduled feedback sessions whereby selected user representatives will provide feedback during development sprints.

Applicants are strongly urged to leverage the WHO SMART guidelines approach to framing the data requirements needs and incorporating the logic into their tools. As such, strong interest is shown for tools that showcase their ability to read L3 and show themselves as able to function as L4 (as per the WHO SMART Guidelines definitions).

6.2 **Deliverables:**

A. Software

- A first version of an immunization registry module within the HWIS that is interoperable via standards-compliant interfaces to support the end-to-end immunization workflow.
- A quality assurance framework and test suite to ensure safety and performance of the solution. Tests should include unit tests for code, integration tests, functional tests to validate that features work as expected, and performance metrics. Tests should comprise functional tests, as well as automated tests where automation is appropriate and feasible. These tests must clearly map back to the SURD and follow good testing practices.
- A packaged solution that ensures ease of deployment and that should align with Instant OpenHIE as much as possible.

- Functionality that allows implementers to validate that the installation of all components can be successfully completed with the generation of an installation report for the purposes of installation qualification. The installation report must show evidence (e.g., screenshots) of the successful completion of each step taken to perform the installation.

B. Documentation

A comprehensive set of immunization registry documentation is imperative. While existing materials can be used, this should not be simply a collection of existing documents for each tool, but instead a harmonized set of product documents using consistent terms and language to provide a seamless view of the overall workflow. This documentation should be in English, but it is highly advantageous if some or all of the documentation is also available in other languages (e.g., French, Portuguese).

	Document	**Intended audience**
1	An immunization registry "brochure" that outlines the value proposition and provides a comprehensive overview of the main features and functions. This should be available in both printable document and presentation slide-deck format.	High-level decision makers (e.g., government leaders, donors, investors).
2	Documentation detailing any relevant information elicited from consultation with in-country stakeholders. The Immunization Product Suite SURD document may be used as the starting point and expanded to add additional detail relevant to the specific country requirements, as appropriate.	Business and system analysts, data analysts.
3	Technical documentation that describes the technical architecture of the solution, including a context diagram that explains the system interactions.	Enterprise/system architects, systems analysts, developers, system integrators.
4	Technical documentation that describes how to deploy, configure, and validate the solution. This must support an Installation Qualification that provides documented evidence of a functioning infrastructure and successful installation deployment of all the solution software components.	Implementers (i.e., individuals/organizations who deploy the software solution and test that it is correctly installed) and information communication technology (ICT) [i.e., individuals/ organizations who are responsible for the power and connectivity infrastructure].
5	A set of detailed test cases that can be used to demonstrate compliance with the functional requirements. This should support an Operational Qualification that provides documented evidence and assurance that the immunization registry functions as expected and produces consistent results. Test cases should be written in Gherkin syntax for ease of re-use where appropriate.	Implementers, quality assurance testers, development teams, people responsible for completing user acceptance testing.
6	User documentation and quick reference guides that describe how to use the components of the immunization registry and that can be used for training purposes.	End users of the immunization registry.
7	Operational documentation that describes how to maintain and monitor the solution and provide first-level support to end users on an operational basis.	System administrators, ICT support staff, end user support staff.
8	Description of the skills and competencies needed to: • Operate the solution (i.e., what skills must a system administrator require to keep the solution up and running).	Individuals/organizations responsible for human resource planning and recruitment.

	• Maintain the solution (e.g., to add new forms, to update vaccination schedules, to create a new report). • Add additional functionality (e.g., what skills must a developer have to be able to add a new feature or interoperate with a new application).	

The following documentation is considered "nice to have," but not a "must":

- Generic standard operating procedures that may be adapted for in-country use.
- Additional tools, checklists, and templates will make it easier and quicker for implementers to plan and manage a successful implementation.

C. Community engagement

The successful applicant will be expected to engage with the relevant open communities as appropriate and should describe any existing participation and a plan for further engagement. These should include the OpenHIE and WHO SMART guidelines communities.

D. Sustainability plan

The sustainability plan should include proposed activities over the project period that would provide all parties with a plan for ensuring the continued success of the implementation. For example, this may include negotiations with the Malawi MOH and local providers to support service-level agreements (SLAs), capacity strengthening activities, or other priority needs identified during the technical assessment. The agreed plan would be delivered at the end of the project.

Financial requirements

Provide itemized costs for the total scope of this project, based on the scope of work and deliverables outlined in section 6.1 and 6.2. The final scope of work may be subject to negotiation; however, bidder selection will be made against the original scope of work. Bids should include itemized costs for key elements of the scope of work, as follows:

- Percent participation in total level of effort according to key staff.
- Rates of key staff.
- Estimated total level of effort and associated costs.
- Itemization of all other costs (e.g., agency costs, agency fees, subcontracted resources, administrative costs, supplies, tax).

Geographic requirements

Applicant(s)/consortium(s) should demonstrate that they have local presence and have resources based in Malawi with capacity to deliver the work to ensure quick turnaround time and minimal cost during the support period and for ease of knowledge transfer and sustainability.

Technical requirements

Provide a narrative on your technical approach to accomplish the scope of work and deliverables per Section 6.1 and 6.2. The submitted proposal must follow the proposal template and is limited to 14 pages (excluding annexes) including:

Section A of the proposal (maximum 14 pages):

1. A detailed work plan with all activities divided into clear work packages. Please describe dependencies, if any, between work packages.
2. A detailed description of the overall solution design, including:
    a. Architectural overview of the product suite components and interoperability workflows.
    b. Description of each software component/tool, including license type and technical stack and links to open source repositories.
    c. Description of the quality assurance framework that will be used to test the product suite.
3. Proposed activities to develop a sustainability plan in collaboration with Malawi MOH, Digital Square, and other stakeholders.
4. Description of all documentation that will be produced and where it will be made available.
5. Description of the competencies required to:
    a. Operate the solution (i.e., what skills must a system administrator require to keep the solution up and running).
    b. Maintain the solution (e.g., to add new forms, to update vaccination schedules, to create a new report).
    c. Add additional functionality (e.g., what skills must a developer have to be able to add a new feature or interoperate with a new application).
6. Description of the vendor/consortium's experience and ability to meet the needs of the project. This should include grant administration, project management, and technical competencies including knowledge of interoperability standards and software quality assurance practices. This should also reference any previous experience related to immunization solutions.
7. Potential risks and a plan to mitigate them.

In addition to the 14-page proposal, the applicant must confirm they are able to deliver:

8. The Functional and Non-Functional Requirements checklist of the SURD document (Annex B).

Section B of the proposal (no page limit):

Provide information on your overall qualifications, including:

- Past performance information sheets demonstrating:
    - Profile of relevant corporate qualifications.
    - Profile of relevant experience and examples of related work.
    - Number of years in business.
    - If your company has more than one location, please indicate these.
- Staffing plan accompanied by Curriculum Vitae (CV) for key technical positions.
    - A staffing plan in accordance with the Cost Application personnel requirements, including specific position titles and the approximate level of must for each position.
    - A complete and current CV must be submitted for each of the key staff/key technical positions, detailing the requisite qualifications and experience of the individual.

Cost requirements

The cost proposal must include a budget narrative, detailing the cost and cost basis applied in generating the proposal and describing the reasonableness of each proposed cost. The Cost Proposal must also include a detailed budget that is itemized by the cost categories defined below. This detailed budget should be submitted in the Excel template, Annex C, and must include the following information:

- Percent participation in total level of effort according to key staff.
- Rates of key staff.
- Estimated total level of effort and associated costs.

- Itemization of all other costs (e.g., agency costs, agency fees, subcontracted resources, administrative costs, supplies, tax).
- Estimated schedule of other anticipated expenses (e.g., travel, selected applicant resources, supplies).

Budget categories
Staff
External services
Transportation/Travel costs
Equipment
Other costs/consumables
Administration costs
Forwarding of funds (subawards)
Total project costs

Cost documents required for submission:
1. Budget in the Excel template compliant with the financial guidelines document provided with this RFP.
2. Budget narrative.
3. Business registration certificate.
4. Tax registration certificate.

7. Fact-finding questions

7.1 Fact-finding questions should be sent to the contacts listed in Section 5.1 by the date in the RFP schedule (section 1). Fact-finding questions received after this deadline cannot be accommodated.

7.2 It is advisable that any fact-finding questions refer to a specific section of the RFP; and to the extent possible, be aggregated rather than sent individually.

7.3 In line with transparency principles, all fact-finding questions and all of PATH's responses to these questions will be shared with all those who confirmed their intent to bid. Questions will be anonymized and answered if PATH reasonably determines that such fact-finding questions do not disadvantage any potential supplier and are not commercially in confidence. If such are commercially in confidence, they shall be handled in line with PATH's policy on information and data.

7.4 PATH may request from a bidder additional information at any time ahead of award, and the bidder will be expected to provide the requested information within the time frame given. Failure by a bidder to provide supplementary information to PATH in a timely manner may lead to the proposal being rejected in full or disqualification from the procurement process.

8. Qualifications, evaluation criteria, and selection

8.1 **Supplier qualifications:** In relation to the scope, provide information on your overall qualifications, including:

- Profile of relevant corporate qualifications.

- Profile of relevant experience and examples of related work.
- Qualifications of key members of the proposed project team (attach CVs and provide details of backup/standby teams).
- Number of years in business.
- Annual revenue.
- If your company has more than one location, please indicate these qualifications for the site that is responding.
- Other as required by specific procurement.

Suppliers that do not meet reasonable qualifications shall not be short-listed and therefore not technically evaluated.

8.2 **Selection and evaluation criteria:** The proposal is to follow the template provided in Table 1. The vendor will be expected to address all the evaluation criteria.

- Stage 1: Proposals will be checked for completeness in terms of submission on time, technical proposal, financial proposal, and all required information. Proposals that are correctly completed will proceed to Stage 2. Any proposals submitted late, incomplete, or with omissions may be rejected at this point. If a proposal is rejected at this stage, it will automatically be disqualified from further review.

- Stage 2: If a proposal passes the Stage 1 evaluation, it will be evaluated in detail in line with the evaluation methodology below. Information provided as part of qualification may be verified at this stage, and as part of the evaluation process.

8.3 **Evaluation criteria:** Proposals will be assessed to determine the most economically advantageous using the criteria and weightings in Table 1 and will be assessed strictly based on the proposal submitted.

Table 1. Proposal evaluation criteria and weighting.

	Description	Points
1	**Sound, feasible technical approach that conforms to all of the components listed in sections above**	**50 points**
	Work plan: detailed work packages with dependencies shown and expected timelines	
	Solution design: • Architectural overview and interoperability workflows. • Description of each software component/tool, including licensing type and technical stack and links to open source repositories. • Description of the quality assurance framework that will be used to test the product suite.	
	Documentation description and where it will all be available.	
	Proposed sustainability plan.	
	Risks and mitigation plan.	
	Competencies needed to: • Operate the solution (i.e., what skills must a system administrator require to keep the solution up and running). • Maintain the solution (e.g., to add new forms, to update vaccination schedules, to create a new report). • Add additional functionality (e.g., what skills must a developer have to be able to add a new feature or interoperate with a new application).	
	Completed functional and non-functional requirements.	

2	**Organizational and team experience in the following areas, to be evaluated by past performance information references**	**25 points**
	Experience with developing, testing, and deploying open source digital health solutions.	
	Experience with common health standards such as HL7 FHIR, International Classification of Diseases (ICD) 9 and 10, LOINC, SNOMED, OpenHIE architecture, and interoperability profiles.	
	Experience working in the immunization domain and/or existing relationships with Malawi.	
	Experience working with government-funded contracts (preferably GIZ, United States government, and/or European governments).	
3	**Costs**	**25 points**
	Budget narrative.	
	Itemized detailed budget.	
	Personnel – at minimum the budget should detail: • All proposed staff/positions with daily rates. • Total number of days in total level of effort according to key staff.	
	Itemization of all other costs (e.g., agency costs, service tax, administrative costs, supplies).	
	Estimated schedule of other anticipated expenses (travel, subawardee resources, supplies, outside resources, etc.)	
	Details of all subcontracted work including proposed consultants as well as proposed subawardees.	

Note: Digital Square reserves the right to include additional criteria.

8.4 **Scoring model:** Proposals that are subjected to technical/detail evaluation will be scored based on the model in Table 2 below for all the technical components. The financial proposal will be evaluated separately, as highlighted in section 8.4.1.

8.4.1 **Financial evaluation:** The "total cost" will be evaluated for the purposes of financial evaluation and prices are not subject to any pricing assumptions, qualifications, or indexation other than that stated in the financial proposal. A maximum score of 25 (financial score/points allocated in the evaluation criteria) will be awarded to the proposal offering the lowest "overall cost." Other proposals will be awarded a mark by application of the following formula: (lowest overall cost / overall cost being evaluated) * x (rounded to one decimal place) = financial score.

8.4.2 **Moderation and application of weightings:** The evaluation panel will moderate criteria that have substantial divergence among the individual scores and agree on the final score (as opposed to averaging scores). The score for each award criterion will be amalgamated to give a percentage score out of 100.

8.4.3 **The recommended winning supplier:** The recommended award winner will be the proposal that receives the highest score out of 100 (combined technical and financial scores) when applying the above evaluation methodology.

8.4.4 Feedback: All those who submit proposals will be provided feedback. At a minimum, each supplier will be informed of how many points they scored, and provided a summary of key strengths and areas for improvement.