TENDER NOTICE:
Implementation of Electronic Health Records Management System

Reference #: KFHRF-2023-004-HF
Date of Issue: Thursday, November 10, 2022
Deadline for Submission: Friday, November 18, 2022

King Faisal Hospital Rwanda Foundation (KFHRF), in collaboration with King Faisal Hospital Rwanda as its beneficiary, is seeking the services of a highly-skilled and professional biomedical supply firm to offer the supply, installation and commissioning of the goods. Therefore, KFHRF hereby invites you to submit your proposal for the implementation of an electronic health records management system in alignment with the attached technical specifications.

Eligible proposals must include the following information to be considered:

- Financial Proposal, with a breakdown of all costs
- Technical proposal, with specifications of the items available
- Specification of the maximum time for delivery
- Validity of the offer
- Copy of the company's tax clearance certificate, VAT registration, and trading license
- Contacts of 3 references (company name, contact email, phone number)

Proposals should be submitted in English, addressed to the Executive Secretary, and submitted to kara.neil@kfhkigali.com and rutavogerwa.j@kfhkigali.com by Friday, November 18, 2022 at 23:59 Central Africa Time (CAT). Please note that this letter is not a binding contract.

Done in Kigali, Rwanda on November 9, 2022

Ms. Kara Neil
Executive Secretary
King Faisal Hospital Rwanda Foundation

KFHR FOUNDATION

TECHNICAL SPECIFICATIONS:
Implementation of Electronic Health Records Management System

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I. OBJECTIVE OF TENDER

The main objective of this tender is to hire a consultancy firm to implement an **Electronic Health Records Management System (EHRMS) and to digitize the existing medical records** as a single integrated platform to manage patient files (including all content such as images, photos, etc.), throughout their lifecycle from their creation to disposal and digitalize old medical records (patient files) in order to store, search and retrieve them in a secure location. The bidder has to propose two options: one with the storage of archived physical documents at the client's premises and another one with the storage of archived physical documents at the service provider's premises.

II. SCOPE OF THE SERVICE

The consulting firm is expected to carry this assignment into three phases:

a. PHASE I: Methodology Description

The consulting firm will work together with the IT Division and Medical Records Management Department to perform an assessment of the files, file structure, classification, file location, and contents (paper documents, image and photo). It will also involve the legal and economic feasibility such as document retention policy, disposal procedures, need for special hardware, software and skilled people to evaluate, etc.

The following are the objectives of the methodology description:

- Identify and provide a list of requirements for digitization in terms of software & hardware, human resources and document conversion space;
- Identify and estimate the number of documents to be digitized, along with timelines
- Provide a guideline to project planning and implementation (cost, timeline and after sales services)
- Provide a project implementation plan/roadmap

b. PHASE II: EHRMS Implementation

- Working with the end users, key personnel to gather, analyze and understand the processes to come up with final requirements of the desired and appropriate ICT infrastructure.
- Making a System Requirements Specification (SRS) document after gathering the requirements.
- Customize/Design and develop an EHR management system to accommodate and manage patient files.
- Supply and implement the EHR system

- Provide Key User Training, User Acceptance Testing and other change management initiatives as it may be required
- Roll-out of the system and hand over to the user department
- Provide post implementation support and maintenance for a period of at least twelve months

c. PHASE III: Digitization of Medical Record

- Sort and organize physical archives to be digitized
- Prepare physical archives for scanning.
- Scan, index and upload the scanned documents and images/photos into the designed electronic archive system.
- Rearrange the scanned physical archives according to the existing physical filing system
- For digitization process:
    - The firm will use its own equipment including but not limited to computers, scanners, scanning software, etc.
    - The firm will ensure that all records (Paper files, images/photos) are entered and that no record is entered more than once. A set of metadata will be developed for the different types of records to allow easy searching.
    - For data entry, the firm is free to use its own capture software on its chosen environment, providing the digitized records, with the required metadata.
    - The firm will deploy its adequately skilled manpower resources to complete the job within the specified time.

III. EXPECTED DELIVERABLES

- Inception report indicating detailed project plan from the feasibility study
- To provide a System analysis and design documents
- A working electronic Health Records Management System (EHRMS) as per the approved design.
- An electronic archive with all records, including images, digitized, stored and searchable within the EHRMS.
- Progress reports, with demo presentations at each stage for the system implementation phase.
- A summarized inventory of digitized files at the end of digitization process;
- A system user guide (User manual)
- Database Architecture/structure
- Implementation of knowledge transfer to the institution personnel.
- Key User Training and User Acceptance Testing
- Final report

IV. DURATION OF THE ASSIGNMENT

The duration of this assignment is for 180 calendar days.

V. QUALIFICATIONS AND EXPERIENCE REQUIRED

- The applicant should be a company with a proven record of three successfully completed projects in the records archiving solution and one of them must be in

Medical Records Archiving Solution field in the last 10 years. This project is requested to be of the same complexity and size as King Faisal Hospital Rwanda.

- The applicant should list the countries where its solution is implemented and the total number of his clients on each country and their complete address e.g. contact details of the previous clients (telephone and emails).
- The applicant should provide at least three references with their contact details and certificate of good completion dated, signed and stamped.
- Provide GDPR certification dated, signed and stamped is a substantial advantage
- Providing ISO/IEC 27001 (International standard for Information Security Management Systems) and ISO 9001:2015 (Quality management) specification dated, signed and stamped is a huge plus

a. Experience of the key personnel:

1. The consultant's personnel must have knowledge, experience and expertise in the field of system analysis, design, development, database and application management and digitalization and must provide CVs of Key staff with concrete evidence of previous experience of similar assignments.
2. At minimum, the Team Leader must have an experience of at least 5 successfully implemented projects similar to this one
3. The supporting staff should have at least 5 years of experience in records and archive management.

VI. PROVIDER RESPONSE

Interested Providers will respond to these terms of reference by submitting the following documents:

1. A Technical Proposal explaining the Archiving solutions capabilities, verifiable work experience through certificates of good completion or engagement, the offer of software and hardware product, and how the objectives will be accomplished. The minimum proposed format for the Technical Proposal will include:
    a. A signed cover letter confirming that the proposal is valid for 120 days from the period of submission and a signed
    b. A one-page executive summary
    c. Provider profile and capabilities
    d. Verifiable examples of experience in similar work, including certificates of completion and of engagement, as well as reference contacts for each project
    e. Provider's understanding of the terms of reference and suggestions to better fit the requirements of the hospital beyond those specified in the terms of reference
    f. System architecture proposed and technical description of software/hardware product offered, implementation methodology, testing and quality assurance approach, proposed implementation timelines, key deliverables and milestones, description of capacity building and post-implementation support
    g. Other information the Provider feels will better explain its suitability for the work

2. A detailed Financial Proposal responding to all aspects of this terms of reference including a specific schedule of recurring license and proprietary technology costs that the hospital needs to be aware of.

VII. EVALUATION CRITERIA

King Faisal Hospital reserves the right to negotiate, accept or reject any or all proposals and quotations at its sole discretion and to pursue or act further on any responses it considers advantageous.

The contract will be awarded to the administratively and technically compliant tender that is the most economically advantageous, taking into account the quality of the services offered and the price of the tender.

Tenders will be evaluated under Quality-Based Selection (QBS) method following the criteria listed below (Pass mark = 100 Points):

CRITERIA	Award criteria	Max. Score
Capability / competence of tenderer to perform the work/service required	Experience of the company (with verified proofs): The applicant should be a company proven with 10 years' experience.	10
	The company must have successfully performed (with verified proofs) at least three projects in the in records archiving solution and one of them must be in Medical Records Archiving Solution field in the last 10 years, with certificates of good completion.	10
Qualification and competency of key staff for the assignment	The team leader must have a proven and verified experience of at least 5 successfully implemented Enterprise Documents Management solutions Projects	15
	The supporting staff should have at least 5 years of experience in records and archive management.	15
Adequacy of the proposed work plan and methodology in responding to the terms of reference.	Quality and adequacy of the proposed methodology	20
	Proposed work plan	10
	Organization and staffing	10
	Knowledge transfer plan (training of client staff)	10
Total Technical Score		**100**

The minimum technical score required to pass: 70%

Kindly use the format given below to provide details of your Commercial Bid..

Item Description	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Total for 5 years
Proposed Software-License Fees *Kindly provide a detailed price list.* *For other proposed system software price, kindly list each additional system software proposed with their prices related*							
Integration costs with future HMIS							
Implementation Costs							
Training Costs							
Cost of Annual Maintenance Contract (AMC)							
Upgrades and Enhancements							
Hardware costs*							
Duties & Taxes							
Other Costs							
Grand Total							

The Digital Document Archiving Solution provider is required to provide detailed, item-wise Bill of Materials with a breakdown of costs as an Appendix along with the Price Bid.

* This item is optional. Nevertheless, the bidder has to provide the technical specifications for each additional hardware in Appendix.

SYSTEM REQUIREMENTS

NO	ITEM	TECHNICAL SPECIFICATION
1.	**Case Management**	The system MUST provide case management Functionalities through electronic folder with capabilities to collect, store, organize and manage information related to a particular case
		The case management Functionality MUST provide extra functions of assignment, creating deadlines, tasks on a particular case
		The Electronic Folder management provided by the system MUST have capability by use of unique keys, be associated with processes, content storage modules and forms.
		The proposed systems electronic case management folder MUST supports collaborative processing of cases, which are the electronic equivalents of paper-based case files that can contain forms, documents, images, and other information related to a specific case.
2.	**Process Management Module**	The proposed system process modules should have the capability to automate, manage, and control repetitive business processes.
		The system MUST include a process dashboard for administrators to manage processes installed on the server.
		The proposed system MUST have capability to present work in either pull mode or Get Next mode. Pull mode gives the user capabilities to choose the work they need to work on while Get next should automatically allocate work in queue to the user.
		The system Process engine MUST support combination of multiple activities into a single operation (Activity Chaining), to significantly improve system throughput and reduce database overhead.
		The system process MUST have capability to reference objects that are stored in different repositories.
		The process engine MUST have capabilities to accurately track the amount of time that users spend performing their work. The work time process MUST be based on an accumulator
3.	**Content Management services**	The system MUST provide content management capabilities that provide storage capabilities to manage content such as ● Text Files ● Word Processing documents ● Spreadsheets ● Scanned documents ● Emailed documents ● Faxed documents

		● Any other type of files
4.	**Document versioning**	The Content Management module MUST incorporate the following Concepts ● Versioning ● Check-in and Check-out ● Custom fields ● Renditions ● Full text indexing ● Security feature up to field level. ● Audit Trail of all actions within the system ● Storage Management ● Image Viewer for the web ● Upload and download Functionality.
		Versioning The EHRMS must support version control of all documents, and must retain a minimum of up to 3 previous versions of documents
		Field Versioning The system should have the capability to do field versioning with a unique field for recording version number.
		The system shall support versioning of documents with automated version control; the versioning number should be controlled by the system and should not be altered.
		The content services Module MUST have a functionality to enable record retention as per the Records Management Policy defined by the organization.
		The system should have capabilities to create renditions, or automatically support generation of a set of renditions whenever a file of a given type is checked in
		The system MUST support a functionality where there is a large amount of interactive check in and check out, to enable enhanced document versioning, to provide for an extra box of check in and check out.
		The system MUST have support for an archive of process instances and case management folder, at the same time retaining the ability to retrieve them when need arises.
5.	**Document Management and Viewing**	The system shall provide facility of Bulk scanning of documents and shall support Client-Server architecture for Scanning solution, so that scanned documents can be temporarily archived before uploading to the central server.
		The system shall support Bulk Import of image and data with automated indexing of documents on the basis of Offline data. The data can be content, such as image files or word processing documents, and/or field data such as account numbers, amounts, or names. The system should not be limited to data sources.

		The system shall support all commonly used file formats as MSOffice, Acrobat, TIF, JPEG, GIF, BMP, DICOM and scanned documents etc.
		The system should have the ability to save and enable viewing electronic file formats in system (PDF, Word, Excel, PowerPoint etc.)
		The system MUST have the capability to enable read or view only mode, read and write Only Mode, read/write /annotate only mode on document shared.
		System MUST support documents to be viewed one page at a time, two pages at a time, with and without displaying thumbnails.
		The Document management system shall provide facility to link cross-related documents through reference keys that are unique to each category of document
		The system shall support distributed document repositories for document upload and access at local level, which can be replicated with central repository at scheduled intervals.
		The system must ensure that electronic records are captured and stored along with associated metadata, regardless of format or technical characteristics The system must ensure that each electronic record and record aggregation is uniquely identifiable and store this identification as metadata with the record
		The system should allow users to capture and store electronic records in their native formats.
		The system should not limit the number of records that can be captured and retained by the system.
6.	**User attributes and security**	There MUST be the separate Authentications from Authorization of users in accessing the system
		The security Mechanism of the system MUST be defined in a way that users are associated to their roles and roles given relevant access Control matrix within the system. The system MUST allow a user to be defined in more than one role.
		The document management system shall support definition of Users, Groups and Roles relation in the system and Access Controls.
		The application security should have the following features ● Session IDs should not be exposed in the URL. ● The system should not allow session fixation, this should be secured on the web server level and application level ● Passwords, session IDs and other credentials MUST be sent over encrypted connections.

		● The system MUST have Session IDs timeout, or user sessions or authentication tokens, ● Single sign-on (SSO) tokens, MUST be properly validated during logout.
		The system shall support access permissions on Folders, documents and object level up to field level. The permissions should be controlled by business users who can be trained to be giving level one support depending on the types of documents they handle. Document permission assignment should be given to the creators and owners of the document.
		The system MUST use access control list to give access to content to a user depending on the group or role the user is a member of.
		The system shall support all commonly used file formats as MSOffice, Acrobat, TIF, JPEG, GIF, BMP and scanned documents.
		The system shall support multiple levels of access rights (/ Edit/ View/ Print/ manage or create etc.).
		The document Management system should allow authors to share confidential information without relinquishing control, to others.
		The system MUST support Cross-system authorization and user roaming allows for document sharing anytime, anywhere. The secondary server user is allowed to grant the document permission to another server user or group in the same system. The user can access the remote server, then access and encrypt documents.
		The web application server in use MUST not be **Cross-site scripting** (**XSS**) and MUST not be able to allow injection of client side scripts in to the web pages.
		The system shall support or provide support for HTTPS's/SSL for secured data transfer
		The document management system should guarantee confidentiality and integrity of shared confidential information through a well-defined access control list.
		The system MUST NOT allow assigning of permissions directly to a user but through defined roles within the system.
7.	**Document Storage**	The system should support unlimited storage capacity by automatic / manual creation of volume disks of predefined sizes and disk labeling.
		The system shall provide ease and flexibility of arranging documents and files electronic folders by Sorting and viewing the documents in the folder through any browser on number of relevant parameters of the document such as

		Name, Date, Type, Size, Pages and Useful Information. It should have a function of classifying these documents into sections.
		The system MUST support creation of Mirrors, and primary storage paths within the storage managers and enable real time mirroring of content from primary storage location to the mirrored Location
		The system MUST provide creation of scheduled migration of data from one Location to the central server, where there is configuration of distributed installations, over same WAN.
8.	**Data Capture and Indexing**	The system must support the range of metadata elements detailed in relevant metadata standards required to support the organizations business.
		The system must be able to automatically capture metadata acquired directly from an authoring application, operating system etc.
		The system must capture metadata specified during system configuration and link it to the electronic record at all time
		The system must allow the manual or automatic updating of all metadata attributes that are determined by classification, following reclassification of a record or, where applicable an aggregation of records.
		The system must be able to store selected metadata overtime, regardless of whether the related record has been archived, deleted or destroyed.
		The system should be able to capture metadata manually by a user
		The system should allow for the definition of customized and user defined metadata fields
		The system should provide facilities to set some metadata fields as mandatory or unique
		The system should retain history in the metadata profile for a record, and also within the Audit trail of modifications of any metadata in a document
		The system should restrict only to authorized individuals the ability to create, edit, delete, and Index file components and their identifiers
		The system should provide facilities for linking/cross referencing of related records
		The system should provide a facility to add new documents to the file by calling a native application from the same interface.
9.	**Scanning of Documents and scanning software**	The system should support quick scanning and indexing of bulk documents. Indexing and quality checks and verification should be mapped as stages in the scanning solution

		The scanning application should be able to be integrated with all types of imaging scanners
		The system should support a client-server architecture to facilitate temporary storing of scanned images locally before uploading to the central server
		The system should support automatic categorization of scanned images as different documents like application form, supporting documents, field reports etc
		The system should provide features that can support automatic indexing from specialized zones like the OCR functionality
		The system should provide a user-friendly GUI for setting the scanning properties
		The system should provide for compression of scanned image files
		The system must be one unified platform feeding many business processes and each department should have its own documents and processes.
10.		The system must allow a secure access to the documents through the web.
11.		The system must allow the integration of the mailing system.
12.		The system must allow export/ import of data from and to any type of industry database.
13.		The system must include a workflow which allows validation at different levels.
14.		Importing of the word processor or spreadsheet data must be possible
15.		Means to indexing documents based on keywords or tags with high-speed document retrieval facility.
16.		Manages and archives documents with full version control and audit trails
17.		Multi-lingual query support.
18.		The system must prevent the destruction or deletion of electronic records and associated metadata at all times except as provided by the Organizations retention and disposal schedule
19.	**Metadata Elements**	The system must draw together all elements of metadata to create a metadata profile for an electronic record or aggregation of electronic records
		The system must support mechanisms for validating the contents of the metadata elements
		The system must be able to manage a metadata profile over time- maintaining links to the record and adding process metadata about records management activities

		The system should support several formats or combination of formats for metadata elements including; alphanumeric, alphabetic, numeric, date/time, and logical
		The system must prevent the destruction or deletion of electronic records and associated metadata at all times except as provided by the Society's retention and disposal schedule
20.	**Searching & Retrieval**	The system should provide flexible and extensive facilities for searching electronic records and aggregations of electronic records and rendering of search results in a variety of formats e.g., display, print etc.
		The system should support advanced search using Boolean and logical operators
		The system should support full text search on image and electronic records
		The system should allow the user to by using different search criteria such us Record unique number, name etc.
		The system should support a facility to export search results to other applications e.g., Excel
		The system should support combined search on each stored document for keywords or indexed data and full text search.
		The system should support display of thumbnails images for each image page so as to quickly navigate to the desired page.
		The system should provide facilities for locking documents/records for editing, with a functionality of check in, checkout and conflict resolution when one document is being accessed by more than two people concurrently.
21.	**Design and architecture**	The System MUST support Relational Database Management system, supporting the following databases ● Oracle 11g and above ● Microsoft SQL 2012 and above ● IBM DB2
		The design of the Electronic Document Management System MUST follows the thin client model. It's should be accessible from latest versions of common widely used browsers including. ● Mozilla Fire Fox ● Microsoft edge ● Google Chrome It will be determined at the time of implementation the standard browser to use for the system and version.
		The Document Management interface shall be customizable with work related interfaces for different

		workers within the organization. The customization or tool box for modelling the interface MUST be part of the document management system which system administrator can easily define the interface through the provided tools with less effort.
		The server platform support MUST be independent at least supporting the following platforms ● Linux (Centos, Red hat, Fedora etc.) ● IBM AIX ● HP-UX ● Windows ● Sun Solaris
		The application MUST support dynamic load balancing for purposes of partition work in a cluster, which is intelligent enough to ● Automatically redistribute work if one server drops out of a cluster. ● Capability to be able to adjust capacity of any server in a cluster so as to maximize on productivity of the servers in a cluster
		The system should or MUST support (J2EE) java 2 enterprise edition platform
		The system should be able to integrate with and Synchronize user accounts and groups with Microsoft Active Directory, or any other form of authentication provided by the J2EE application server or web server
		Provide an automated environment for capturing and storing electronic documents (digital images) quickly and effectively for archival permanency in an electronic environment
		The system shall support multiple and separate storage areas for better management of documents. The system must also be able to mirror storage areas to ensure retrieval after a disaster. An added benefit would be to allow the management of storage areas that have exceeded capacity and to be able to overflow to the next available storage area.
22.	**Compliance**	The system MUST comply or conform to compliance issues such as data governance, data protection, operational risk and best practice.
		The system MUST comply with regulations set in securing volumes of data.
		The system MUST be able to keep the originality of the versioned document by storing annotations in layer or maps and association with original file

		The system MUST be able to keep an audit trail of a document life cycle from creation to destruction. To record and report on the comments and approvals given during the document's lifecycle.
23.	**Tool Box- Administration**	The system shall support web-based administration module for the complete management of system.
		The Admin module shall support Users/Groups/Role definition and granting Access Rights to them and set password expiries.
		The Admin module shall provide easy to use interface for Index structure definition that can be used by different users.
		The Admin module shall provide facility to take complete and incremental backups through configuration of mirror pools and shall be able to integrate with third party backup solutions.
		The admin interface shall provide facility and interface to define workflows with sequential and flexible routes and option to set escalation mechanism.
24.	**Training**	System Management Training for IT Staff for future scalability of system. System operation training for at least 20 End Users to train others
25.	**Location experience**	Located in Rwanda for at least 5 years
26.	**Registered**	Please provide registration details including Company Registration with RDB, Tax Registration with RRA, VAT Registration and RSSB.
27.	**References from existing clients**	Please provide proof of specific experience in required services (e.g. in providing Offsite Document Storage and Retrieval of documents) and submit references (on organization's letterhead including relevant contact person/details, nature of service, contract amount, commencement date) of similar work undertaken with relevant completion certificates.
28.	**List of standards and accreditation**	Please provide any standards or accreditation achieved by your company e.g. ISO, Quality Management certificates, Environmental etc.
29.	**Services available**	Please detail which of the following services are provided:
		>Help with archiving / inventory management
		>Storage (Physical)
		>Transport of files
		>Disposal
		>Equipment (boxes, etc.)
31.	**Storage duration**	**Contractor must:**

		Be able to provide storage
		Store files according to the duration determined by King Faisal Hospital, local legislation and donor requirements
32.	**Location/capacity/segregation**	**Contractor must:**
		Have sufficient space for King Faisal Hospital - specific records of:
		Standard size boxes
		Ensure secure separation from other customer's records
		Ensure location is easily accessible for authorised personnel
		Ensure contact person is available during day and night
33.	**Security & Compliance**	**Contractor must:**
		Be able to guarantee the conditions for keeping the files. Please provide details of:
		>Humidity control measures
		>Pest and Rodent control
		>Fire protection system
		>Racking system
		Be able to guarantee the conditions for keeping the files secure and in good condition throughout transportation, storage, retrieval and destruction. Please provide details
		Hold suitable insurance in case of breach or damage to files. Please provide details.
		Hold suitable insurance in case of fire, flood & other natural disaster
		Have sufficient security measures in place. Please provide details of:
		>Secure storage 24/7 (CCTV/Alarm systems)
		>Staff checking process
		>Controlled access to records
		Be able to dispose of confidential waste in a secure way. Please specify how this is managed
		Be compliant with local law regarding record retention. Please also specify if you are compliant to international GDPR requirements
34.	**Moving archives to storage/Collections**	**Contractor must:**
		Have a clearly defined process for acceptance/collection of documents
		Provide a standard range of boxes. Please provide size/pricing information
		Provide evidence of a standardised way of storing/classifying which allows easy access, clearly identifies what is in storage

35.	**Retrieving archives from storage**	**Contractor must:**
		Be able to find and make available specific documents within '2 no. of days'
		Please specify cost involved to retrieve or move documents?
		Provide definition/control for of authorised users
		>How/Who to communicate with the contractor
		>How do you control access/ define authorised users
		>How many authorised users are allowed
36.	**Disposing of archives**	**Contractor must:** Have a clearly defined process of destruction Please specify: >whether in house or outsourced >how you manage co-ordinate destruction dates as per record inventory >whether prior authorisation is required from King Faisal Hospital and what process >how you ensure security of records being destroyed >what are the environmental practices regarding destruction >what certification you provide for records that have been destroyed