INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
Powai, Mumbai 400076.

Ref. PR No. 1000044310 Rfx. No. 6100002000

Item Description: Hospital Management Information System (HMIS)/ Electronic Medical Records (EMR) for IIT Bombay Hospital

Sr. No	Item Description	Detailed Technical Specification	Technical Compliance (Yes / No)	Additional Information (if any)
1.	Base HMIS Software	HMIS Base Software installation		
2.	Data Migration	1. Data Cleansing, Mapping, Validation, Migration 2. Configuration of User Roles and Permissions 3. Workflow Customization		
2.1		Year 1, Phase-1: One Time master data		
3.	Customization and Go Live	HMIS Software Customization and Go-Live as per the FRS.		
3.1	Customization and Go Live	Y1, P1 Go-Live CERT EntDB Please refer to the “Detailed Scope of Work > Phase-1” specified in the “Scope of Work” section of this document, including: 1. Safe-To-Host certification from CERT empanelled agency 2. Procurement of Enterprise Database licenses		
3.2		Y1, P2 Go-Live Please refer to the “Detailed Scope of Work > Phase-2” specified in the “Scope of Work” section of this document.		
4.	On-site personnel	On-site personnel for technical support, training etc. for the period of 12 months (from 2 months prior to the first go-live till the stabilization of Phase-2) For Technical support: - Troubleshooting and Issue Resolution - Understanding requirements for customization		

		- Proactive Monitoring and Support For Training: - Personalized Assistance - Hands-On Experience - Others Assistance etc Vendor to assign a trained Implementation Engineer on-site for at least 10-12 months, and IITB will bear the cost of the manpower. All formalities related to the hiring and training of this personnel should be done by the vendor. IITB shall provide an office space to this personnel, and s/he will have access to the basic amenities of the office. IITB will not be responsible for the lodging and boarding of this personnel.		
4.1		Q1: On-Site Personnel		
4.2		Q2: On-Site Personnel		
4.3		Q3: On-Site Personnel		
4.4		Q4: On-Site Personnel		
5.	Medical Equipment Interfacing per eqp	Year 1, Phase-2: Medical Equipment Interfacing per equipment (1) EM 200 Transaria (Biochemistry and Analysis) (2) H 560 Transaria (Hematology) (3) Sonography + 2D Echo (4) ECG, X-Ray		
6.	API integration	The key service line items involved in third-party software integration: 1. Integration Requirement: Conduct discussions with IIT Bombay and external parties to gather integration requirements. 2. Feasibility Study: Assess technical feasibility, including compatibility and potential challenges. 3. API Documentation: Obtain and review API documentation of the third-party software. 4. Interface Design: Design the data exchange formats, protocols (e.g., REST), and endpoints. 5. Security Specifications: Define security measures for data exchange, such as authentication, encryption, and authorization. 6.Environment Setup: Set up environments for development and testing. 7. Testing and Quality Assurance 8. Deployment and Configuration : Deploy the integration components to the production environment.		

6.1		Y1, P1: Patient Data API, Portal Integ Year 1, Phase-1: REST API integration for Patient data, and internal ERP portals. (1) IIT Bombay Beneficiaries Data Integration for Patient Data (2) REST APIs for IIT Bombay Internal Portal Integrations		
6.2		Y1, P2: External Pharmacy API Year 1, Phase-2: Third party software integration REST APIs for integration from local Pharmacy.		
6.3		Y1, P2: External Pathology API Year 1, Phase-2: REST APIs integration from the external pathology		
6.4		Y1 P2: Whatapp API Year 1, Phase-2: Interfacing with WhatsApp for appointment booking.		
6.5		Y1, P2: PACS Integration Year 1, Phase-2: Procurement, installation, licensing, integration and AMS of PACS with the HMIS.		
7.	Software support and maintenance	1. During the Complete software support period, Vendor will provide Project Administration, Change requests (12 person- days per month), statutory upgrades, security updates, bug-fixes, and technical support for the HMIS software. Data centre operations: system health monitoring, backup, Disaster Recovery, and Mock drills. 2. During the peripheral support period, Vendor will provide Change requests (60 person- days per year), statutory upgrades, security updates and bug-fixes. 3. Any software defects or bugs that disrupt HMIS services and cannot be addressed by IITB will be attended to and resolved by Vendor as part of the complete and peripheral support.		
7.1		Year 1 Q1: Complete Support Complete software support, Statutory updates / Upgrations and Maintenance		
7.2		Year 1 Q2: Complete Support Complete software support, Statutory updates / Upgrations and Maintenance		
7.3		Year 1 Q3: Complete Support Complete software support, Statutory updates /		

		Upgrations and Maintenance		
7.4		Year 1 Q4: Complete Support Complete software support, Statutory updates / Upgrations and Maintenance		
7.5		Year 2 Q1: Complete Support Complete software support, Upgrades and Maintenance.		
7.6		Year 2 Q2: Complete Support Complete software support, Upgrades and Maintenance.		
7.7		Year 2 Q3: Complete Support Complete software support, Upgrades and Maintenance.		
7.8		Year 2 Q4: Complete Support Complete software support, Upgrades and Maintenance.		
7.9		Year 3 Q1: Complete Support Complete software support, Upgrades and Maintenance.		
7.10		Year 3 Q2: Complete Support Complete software support, Upgrades and Maintenance.		
7.11		Year 3 Q3: Complete Support Complete software support, Upgrades and Maintenance.		
7.12		Year 3 Q4: Complete Support Complete software support, Upgrades and Maintenance.		
7.13		Year 4 Q1: Peripheral Support Peripheral Software support, and Upgrades.		
7.14		Year 4 Q2: Peripheral Support Peripheral Software support, and Upgrades.		
7.15		Year 4 Q3: Peripheral Support Peripheral Software support, and Upgrades.		
7.16		Year 4 Q4: Peripheral Support Peripheral Software support, and Upgrades.		
7.17		Year 5 Q1: Peripheral Support Peripheral Software support, and Upgrades.		
7.18		Year 5 Q2: Peripheral Support Peripheral Software support, and Upgrades.		
7.19		Year 5 Q3: Peripheral Support Peripheral Software support, and Upgrades.		

7.20		Year 5 Q4: Peripheral Support Peripheral Software support, and Upgrades.		
8	Transfer of software to IITB	1. The source code of the Customized HMIS developed under this project shall be provided to IITB, within 7 days upon receipt of Full and Final payment by the vendor. IITB accepts, acknowledges and agrees that the same cannot be used for any other commercial purposes except for use/ improvement/further customization of the same for the use of IITB. 2. The right of modification of the customized application developed under this project shall be with IITB. 3. IITB would ensure that IITB or any other 3rd party will NOT use the source code /Part of source code for any commercial purpose. 4. A complete Know-How Transfer activity will be provided to the identified team of IITB on the customized/ developed HMIS application software.		

*** NOTE: Please refer below "Request for Proposal" (RFP) for HMIS/ EMR for IIT Bombay Hospital**

भारतीय प्रौद्योगिकी संस्थान मुंबई

Request for Proposal (RFP) for HMIS/ EMR for IIT Bombay Hospital

Table of contents

1. Abbreviations/ Acronyms (used in this document)

IITB	Indian Institute of Technology Bombay
ERP	Enterprise Resource Planning
HMIS	Hospital Management Information System
EMR/EHR	Electronic Medical/Health Records
OEM	Original Equipment Manufacturer
SI	System Integrator (the Software Provider selected to implement the HMIS)
ABDM	Ayushman Bharat Digital Mission
ABHA	Ayushman Bharat Health Account
PACS	Picture Archiving and Communication System
DICOM	Digital Imaging and Communications in Medicine
ICD	International Classification of Diseases
HL-7	Health Level-7
FHIR	Fast Health Interoperability Resources
GP	General Practitioner

2. Preamble

IITB runs a primary Healthcare center which caters to a large patient base ranging from its employees and their family members, students, pensioners and authorized members of certain medical schemes. The hospital currently uses a home-grown HMIS which covers limited functionalities, and is not attuned with the latest technologies and compliances that have come in force in the field of Healthcare services.

In view of this, IITB recommends implementation of a best-suitable HMIS that is well-defined, comprehensive and scalable. The primary objective of procuring a fresh HMIS is to infuse a digital transformation which is expected to assist our Hospital in developing procedures and systems that are interconnected for both patients and medical personnel. This is eventually expected to result in enhanced stakeholders' satisfaction, cost and time savings, streamlining and ease of operations, insightful & data-driven Reports and Dashboards.

IMPORTANT: Through this RFP, IITB invites bids from HMIS bidders considering their organization satisfies the Pre-Qualification criteria. The bidder whose organization and HMIS product DOES NOT satisfy the prequalification criteria, their commercial bid will NOT BE CONSIDERED by IITB.

3. Pre-Qualification criteria

Pre-Qual Criteria No.	Particulars	Supporting document to be enclosed
1	The bidder should be a company registered in India under the Companies Act or a Limited Liability Partnership (LLP) with a registered office and operations in India for the last 3 years. **OR** The organization should be a direct Subsidiary or an Autonomous society affiliated or under any of the Indian Central government department/ministry	Certificate of Incorporation OR Certificate/Letter of establishment
2	The bidder should have an office and a development centre in India.	Address proof for the registered company
3	The HMIS product must have been deployed in the following setups in the last three years: 1. At least Three Multi-speciality Hospitals in Tier-1 cities of India each with at least 300 beds, AND 2. At least in Three Central or State Government hospitals of at least 300 beds each	Bidders must provide verifiable proof of implementation, such as work orders, completion certificates or testimonials from the respective organizations. Details of the number of projects completed, including location, type of healthcare facility and population serviced must be provided
4	A. For a proprietary HMIS (non open source), the OEM should have an average annual turnover of ₹10 crores over the last three financial years. B. The implementation partner should have an average turnover of ₹1 Crores for the last three financial years.	The Audited Financial Statements (Profit and loss statement, Balance sheet) for the last three years and CA certificate should be furnished/ uploaded.
5	The bidder should have at least 10 consultants/developers working on HMIS products.	Bio-data of the personnel proposed to be deployed for the project along with copies of the biodata, valid company ID, and salary slips.
6	The bidder should have at least two ongoing projects for hospitals with the proposed HMIS product for Installation, Customisation, and/or Maintenance support.	Copy of purchase orders (or equivalent testimonials) and satisfactory completion certificate issued by the clients.
7	HMIS basic Product requirement. 1. HMIS software should be installable on (any flavor of) a Linux Operating System 2. Installation of the HMIS product should be on-premise (and not cloud-based) 3. HMIS access to all its users should be purely	A declaration stating the specification against each of the requirements.

	web-based (no installation should be required for the clients desktops) 4. HMIS should not have a paid License based model; IITB should be able to create any number of users under any role. 5. HMIS should be built on open-source frameworks (like Java, PHP, Python) 6. HMIS database must be an open-source non-proprietary license model. (Any Enterprise license, if required, will be procured by IITB)	
8	The HMIS product must have these following functionalities as a part of standard modules. 1. Modules: OPD with appointments, Patient portal, Doctor-Patient interaction and notings, IPD, Pathology, Pharmacy- Basic stock data. 2. Integration: REST Web Services/ RESTful APIs for import of patient data from external resources, and providing key MIS reports for consumption by other applications.	Declaration of the features available against each of the requirements.
9	The HMIS product must have these following capabilities. 1. Modules: Pharmacy- Inventory, OPD Medical Officer daily roster, OPD Templates for notings for Specialists 2. Government of India compliances: ABDM 3. Interoperability standards: DICOM, HL7/FHIR 4. Adoption of medical nomenclatures: ICD, SNOMED-CT 5. Medical devices and PACS integration: X-Ray, USG, Pathology equipments, Smart medical gadgets etc.	Declaration of the Standards already available or the roadmap of the Work-in-progress

4. Scope of Work

The Total cost of ownership **(TCO) of the project is for Five years**, with the **first year for HMIS installation and customization** in a phased manner, followed by **Two years of full support**, and thereafter **Two years of peripheral support**. The entire project trajectory with the scope of work is indicated below. (M : Month)

Phase	Scope of work M: Month	Detailed scope of work
Phase-1	**(M0-M6: 6 months)** Hardware setup and Implementation & Go-Live of standard modules/ functionalities	**A. Prior to Week-1** ● Hardware procurement: Hardware specifications for hosting the HMIS Data Centre and Disaster Recovery (DC & DR) will have to be recommended by the vendor, and will be procured by IITB. ● We recommend a two-step staging server model, where the first server will be for Quality and Testing purposes i.e Quality server / User Acceptance Testing (QA or UAT), and the other will be the Production (PRD) server. ● It is expected that all changes will be first done on the QA/UAT server and then transported to PRD upon successful testing results. No direct updates should be allowed on the PRD server. ● Setup of Disaster Recovery (DR) **B. Week 1** ● Setting up of ○ Development and/or Staging, and Production environments with the required OS, DNS, firewalls, network components, load balancers etc. ○ Front-end application components (e.g., web servers like Apache, Nginx) ○ One-time application installation and support ○ SSL certificates ○ Database management systems ○ Setting up of secondary servers at the DR site with Replication Configuration ○ Backup server and mechanism ○ Continued DC and DR support ● Installation of base HMIS software

		● Initiation of the formalities for the web security clearance certificate **C. Week 2** ● Configuration of Essential features with out-of-box availability (features as specified in Phase-1 of the Functional Specification Requirements given in this document) **D. Week 3** ● Establishing a permanent Integration channel with IITB ERP system for continuous syncing of user (patient) data ● Creation of HMIS users (Technical and Administrative staff), and assigning roles and authorization to them. ● Data Migration of the relevant legacy data **E. Week 4** ● Testing and Quality assurance on QA ● User Training sessions on QA ● Transport the setup (code, configuration and data) to PRD ● Beta Release of Out-of-box features (with live patient data) on PRD. **F. Months 2-6** ● Requirement gathering for customisation of the software in all of the Phase-1 features ● Sign-off on the detailed FRS from the business owner(s) ● Carrying out the Customisation as per IITB requirements specified in the FRS ● User Acceptance Testing (UAT) sessions for Unit as well as End-to-end scenario testing using live data with the relevant users ● Detailed User Training sessions ● Change management sessions ● Receipt of the web security clearance certificate ● **Release of Phase-1 on Production environment** ● **Integrate HMIS with existing systems (IIT Bombay Internal Portal), ensuring smooth data exchange and process continuity**
Phase-2	**(M6-M12: 6 months)**	**A. Months 6+ : Phase-1 Support** ● Continue to support the released features of Phase-1

	Implementation & Go-Live of modules/ functionalities requiring customization	● Carry out the enhancements, bug fixes etc. in the Phase-1 features, as per the user requirements **B. Months 6-12 : Phase-2 Customization** ● Requirement gathering for customisation of the software in all of the Phase-2 features (features as specified in Phase-2 of the Functional Specification Requirements given in the Section-5 of this document) ● Sign-off on the detailed FRS from the business owner(s) ● Carrying out the Customisation as per IITB requirements specified in the FRS ● User Acceptance Testing (UAT) sessions for Unit as well as End-to-end scenario testing using live data with the relevant users ● Detailed User Training sessions ● Change management sessions ● **Release of Phase-2 on Production environment**
Phase-3	**(M13-M36: 2 Years)** Complete Support Phase	**A. Months 13-36: Stabilization Phase & Full Support** ● FULL TECHNICAL SUPPORT of modules released in Phase-1 & Phase-2 ● Issue resolution and pending deliverables completion ● Knowledge transfer and Handing over of the code and database details to the IITB technical team.
Phase-4	**(M37-M60: 2 Years)** Peripheral support phase	**A. Months 37-60: Extended support** Peripheral tech support in software or other upgrades, security patches etc.

5. Proposed project Time-lines

Delivery of the HMIS is expected to be in a phased manner as per the details below.

Q - Quarter, M - Month

Sr. No.	Requisition line item	Additional details	Year-1				Year-2				Year-3				Year 4	Year 5
			Q01 M 1-3	Q02 M 4-6	Q03 M 7-9	Q04 M 10-12	Q05 M 13-15	Q06 M 16-18	Q07 M 19-21	Q08 M 22-24	Q09 M 25-27	Q10 M 28-30	Q11 M 31-33	Q12 M 34-36	Q13-16 M37-48	Q17-20 M49-60
1	Base HMIS Software	Base software installation	Ph 1													
2	Data migration	One time data handling	Phase 1 & 2													
3	Implementation and Go Live	Year 1: Phase-1	Phase 1													
		Year 1: Phase-2			Phase 2											
4	On-site personnel	Year 1		Phase 1 & 2												
5	Medical Equip. Interfacing	Year 1			Phase 2											
6	API integration	Year 1:Phase-1 & 2	Phase 1& 2													
7	Software support and maintenance	Year 1	Phase 1&2													
		Year 2					Phase3									
		Year 3									Phase 4					
		Year 4													Ph 4	
		Year 5														Ph 4
8	Transfer of software to IITB	Year 3									Phase 4					

6. Functional Requirements Specifications (FRS)

Features to be implemented in **Phase-1**

1. Front desk	1.1. OPD Coupon/Token	● Issuing tokens to authorized patients (first visit is allowed to any GP) ● ABHA Registration for Patient
	1.2. Specialist Appointments	● Giving a Specialist appointment based on the recommendation of the GP ● Follow up (only for 3 months)
2. Pathology	2.1. Master Data of the clinical tests	● List of Pathological tests, sub-tests etc…
	2.2. Clinical tests	● Scheduling the appointment ● Scheduling the Sample collection based on a given appointment ● Entry of tests / test-results (manual entry or auto-upload from pathological equipments) ● Issuance of the pathology report ● Consent Form (to be customized for various docs)
3. Technical features	3.1. System activity	● Ability to periodically sync data in the HMIS of eligible users through REST API (Employee, Students, Pensioners & authorized personnel associated with certain schemes) from the ERP-HR system ● Must provide REST APIs for use in other ERP software and the existing self-service portal ● Backup, confidential storage, and restore of code, config, and data
	3.2 Electronic communication	● Email ● SMS
4. Doctors noting	4.1 Doctor-Patient interaction	Doctor should be able to record the following details during the patient visit: ● Vitals ● Sign and Symptoms ● Diagnosis ● Prescribe medicines ● Recommend clinical tests/ investigations ● Choose an existing Treatment plan(s)
5. Pharmacy	5.1. Master data of medicines	● Maintaining the generic name and brand of the medicine stock

Features to be implemented in Phase-2

1. Front desk Admin	1.1. Roles and Authorization of Hospital users	● Maintaining the user list who are authorized to access HMIS.
	1.2. Schedule Management	● Maintaining time schedules for Medical Officers and visiting doctors
	1.3. Daily roster (Duty chart)	● Maintaining OPD Medical Officer daily roster
	1.4. Service Unit Management	● Configuring various types of service unit in the Hospital facility
	1.5. Notification	● Send notification to recognized groups - nurses, doctors, specific specialist, ward, external entities (managed by admin)
2. Doctors noting	2.1. Doctor-Patient interaction	Doctor should be able to record the following details during the patient visit: ● Vitals ● Sign and Symptoms ● Diagnosis ● Prescribe medicines ● Recommend clinical tests/ investigations ● Choose an existing Treatment plan(s)
	2.2. Certificates	● Issuing Medical/ Fitness or Under treatment certificate ● Issuing Illness (long term treatment) certificate
	2.3. External References	● Outside clinical test/ investigation ● Outside expert consultation ● Patient transfer to outside hospital for further management
	2.4. Custom noting for Specialists	● Ophthalmologist ● Dental ● Psychiatrist ● Surgeon ● Physiotherapist ● Orthopedic ● ENT
3. Pharmacy	3.1. Inventory management of medicines	● Managing stock under each generic name which will be accessible to authorized Doctors, Dispensary unit and Wards
4. Clinical facilities	4.1. Physiotherapy	● Maintaining Physiotherapy/ occupational therapy plans
	4.2. Radiology	● Basic upload of MRI, CT, X-ray etc. images ● Consent form

5. IPD / Ward	5.1. IPD/ Admission	● Bed availability status ● Ability to assign bed to patients ● Maintain ward inventory management ● Maintain a daily chart (tests/medicines/treatment plan etc.) per patient ● Prescribe medicines, clinical tests, investigations etc. ● Transfer patient to other hospitals ● Medical certificates ● Discharge summary of patients ● Non-entitled patient's billing
6. Facilities/ Campaigns	6.1. Ambulance	● Ability to generate ambulance requisition for patients (excluding emergency) ● Maintain availability status ● Authorized personnel can book the vehicle for emergency ● Facility to the driver/helper to share the Live location of the ambulance
	6.2. Patient queue management	● Specialist queue appointment activation ● Issuance of token ● View of current status of token
	6.3.Clinics (Pediatric, Asthma etc.)	● Maintain schedule ● Authorized personnel can book appointment
	6.4. Fitness Centre	
	6.5. Vaccination	
	6.6. Blood donation OR any other medical camps	● Maintain Schedule ● Maintain Records
	6.7. OT (Operation Theater)	● OT availability status ● OT Booking ● Maintain OT inventory management
	6.8. Sample collection for Research project	● Appropriate report for this purpose
	6.9 Patient self-service portal	● View entire EMR history (of self and entitled dependents) along with ABHA details ● Manage Appointments ● Take tokens against active appointment
	6.10 Student Medical Certificate	● Facility to view the certificates issued by the Hospital based on the QR code
7. Technical Features	7.1. Electronic communication	● WhatsApp
	7.2 Health Standards integration	● ABDM (M1, M2, M3) ● ICD 10/11 or SNOMED-CT ● HL7/FHIR compatibility

	7.3 Payment Gateway (PG) integration	● Linking to an established PG functionalities with facility of payment confirmation and reconciliation (Note: Further integration with accounting system will be done by IITB team) ● Facility to directly create receipt in the main accounting system
	7.4 Miscellaneous capabilities	● REST Web Services/ RESTful APIs for for integration from Hospital's local Pharmacy, external pathology, WhatsApp for appointment booking
8. Radiology **(Procurement and integration of a suitable open-source or in-built PACS will be vendor's responsibility)**	8.1 Integration with HMIS/EMR	● Seamless integration with HMIS for patient demographics, appointment scheduling
	8.2 Image acquisition and Management	● Support for all DICOM modalities ● Storage and retrieval of large imaging files
	8.3 Image viewing and Reporting	● Web-based and mobile-friendly DICOM viewer ● Integration of diagnostic reports with EMR, allowing viewing alongside
	8.4 Interoperability	● HL7 and FHIR standards for interoperability with other systems
9. Desired features **(These features are not to be factored in the customization cost of Phase-1 and 2, but will be charged by vendor on real efforts basis, whenever these are delivered to IITB)**	9.1 Healthcare apps	● Development of Healthcare apps to allow medical professionals and healthcare facilities to work more quickly and obtain reliable patient data and health measurements.
	9.2 Health Card app	● Medical smart card app with Patient ABHA number ● Patient Basic details
	9.3 Ambulance	● Location entry either in IIT map or overall Mumbai city map by the hospital staff for sending the ambulance (integration with GPS navigation device)

7. Price bid format

Sr. No.	Main line item	Sub item	Service line item description	Service line item deliverables (in detail)	Qty	Quoted price in INR
10	**Base HMIS Software**	10	**HMIS Base Software installation**	HMIS Base Software installation	1	
20	**Data Migration**	20	**Year 1, Phase-1:** One Time master data handling	1. Data Cleansing, Mapping, Validation, Migration 2. Configuration of User Roles and Permissions 3. Workflow Customization	1	
30	**Customization and Go Live**	30.1	**Year 1, Phase-1:** HMIS Software Development, Customization and Go-Live as per the FRS	Please refer to the "Detailed Scope of Work > Phase-1" specified in the "Scope of Work" section of this document, including: 1. Safe-To-Host certification from CERT empanelled agency 2. Procurement of Enterprise Database licenses	1	
		30.2	**Year 1, Phase-2:** HMIS Software Development, Customization and Go-Live	Please refer to the "Detailed Scope of Work > Phase-2" specified in the "Scope of Work" section of this document	1	
40	**On-site personnel**	40	**Year 1:** On-site personnel for technical support, training etc. for the period of 12 months (from 2 months prior to the first go-live till the stabilization of Phase-2)	**For Technical support:** - Troubleshooting and Issue Resolution - Understanding requirements for customization - Proactive Monitoring & Support **For Training:** - Personalized Assistance - Hands-On Experience - Others Assistance etc Vendor to assign a trained Implementation Engineer on-site for at least 10-12 months, and IITB will bear the cost of the manpower. All formalities related to the hiring and training of this personnel should be done by the vendor. IITB shall provide an office space to this personnel, and s/he will have access to the basic amenities of the office. IITB will not be responsible for the lodging and boarding of this personnel.	1	

Sr. No.	Main line item	Sub item	Service line item description	Service line item deliverables (in detail)	Qty	Quoted price in INR
50	**Medical Equipment Interfacing per eqp**	50	**Year 1, Phase-2:** Medical Equipment Interfacing per equipment	**Year 1, Phase-2:** Medical Equipment Interfacing per equipment (1) EM 200 Transaria (Biochemistry & Analysis) (2) H 560 Transaria (Hematology) (3) Sonography + 2D Echo (4) ECG, X-Ray	4	
60	**API integration**	60.1	**Year 1, Phase-1:** REST API integration for Patient data, and internal ERP portals	(1) IIT Bombay Beneficiaries Data (EHS) Integration for UHID/Patient Demographics (2) REST APIs for IIT Bombay Internal Portal Integrations	1	
		60.2	**Year 1, Phase-2:** Third party software integration REST APIs for integration from local Pharmacy	The key service line items involved in third-party software integration: 1. Integration Requirement: Conduct discussions with IIT Bombay and external parties to gather integration requirements. 2. Feasibility Study: Assess technical feasibility, including compatibility and potential challenges. 3. API Documentation: Obtain and review API documentation of the third-party software. 4. Interface Design: Design the data exchange formats, protocols (e.g., REST), and endpoints. 5. Security Specifications: Define security measures for data exchange, such as authentication, encryption, and authorization. 6.Environment Setup: Set up environments for development and testing. 7. Testing and Quality Assurance 8. Deployment and Configuration : Deploy the integration components to the production environment.		
		60.3	**Year 1, Phase-2:** REST APIs for integration from the external pathology			
		60.4	**Year 1, Phase-2:** Interfacing with WhatsApp for appointment booking			
		60.5	**Year 1, Phase-2:** Procurement, installation and Integration, licensing, integration and AMS of PACS with the HMIS			
70	**Software support and maintenance**	70.1	**Year 1:** Complete software support, Statutory updates / Upgrations and Maintenance	1. During the Complete software support period, Vendor will provide Project Administration, Change requests (12 person-days per month), statutory upgrades, security updates, bug-fixes and technical	1	

Sr. No.	Main line item	Sub item	Service line item description	Service line item deliverables (in detail)	Qty	Quoted price in INR
		70.2	**Year 2:** Complete software support, Upgrades and Maintenance	support for the HMIS software. Data centre operations: DC & DR support, routine system health monitoring, Disaster Recovery and Mock drills. 2. During the peripheral support period, Vendor will provide Change requests (60 person- days per year), statutory upgrades, security updates and bug-fixes. 3. Any software defects or bugs that disrupt HMIS services and cannot be addressed by IITB will be attended to and resolved by Vendor as part of the complete and peripheral support.	1	
		70.3	**Year 3:** Complete software support, Upgrades and Maintenance		1	
		70.4	**Year 4:** Peripheral Software support, and Upgrades		1	
		70.5	**Year 5:** Peripheral Software support, and upgrades		1	
80	**Transfer of software**	80	**Year 3:** Transfer of software to IITB	1. The source code of the Customized HMIS developed under this project shall be provided to IITB, within 7 days upon receipt of Full & Final payment by the vendor. IITB accepts, acknowledges and agrees that the same cannot be used for any other commercial purposes except for use/ improvement/further customization of the same for the use of IITB. 2. The right of modification of the customized application developed under this project shall be with IITB. 3. IITB would ensure that IITB or any other 3rd party will NOT use the source code /Part of source code for any commercial purpose. 4. A complete Know-How Transfer activity will be provided to the identified team of IITB on the customized/ developed HMIS application software.	1	

8. Terms and conditions & Payment Terms

Terms and conditions

a. Vendor will provide the necessary APIs to IITB for integration with IITB's Internal applications and services. The integration of the APIs into the portal's source code will be the responsibility of the IITB team. Vendor will not directly engage in the development of any IITB internal portal related applications.
b. The migration of existing data will be a part of the Phase-1. After conducting a feasibility study, the Vendor team will provide the format or structure for porting data into HMIS.
c. Depending on the dependency on Phase-1 deliverables the following features (classified in Phase-2) could be prioritized and implemented in Phase-1 by the vendor
    i. The OPD Doctor desk for pathlab and specialist referrals
    ii. Health Standard Integration (SNOMED CT & ICD 10), alongside the OPD Doctor desk module
    iii. OPD Roster
d. SMS, email gateway, Mobile app publishing accounts and APIs are required to be provided from IITB during Phase-1 so that it could be integrated alongside services.
e. Procurement, integration and support of a suitable open-source or in-built PACS will be the vendor's responsibility. The charges for the PACS software are to be accounted for in the Price-Bid and billed to IITB.
f. Results of externally performed pathology tests, available in structured data format (FHIR as prescribed by ABDM), should be transferred into the HMIS pathology module for displaying combined reports in the final reports of HMIS.
g. Medicine stock availability in structured data format should be captured into the Pharmacy module of HMIS for displaying in the "medicines in-stock" list of HMIS.
h. All required softwares, EDB licenses, VM platforms, FTP servers etc will be purchased and managed by IITB for installation. Vendor Data Centre team will perform the installation either on-site or remotely through VPN provided by IITB.
i. Change requests handling:
    i. During the Complete Support period (years 1 to 3), an average of 12 person-days per month should be included in the price bid for Change Requests that is not covered in the FRS.
    ii. During the Peripheral support period (years 4 and 5), a total of 60 person- days per year must be included in the price bid.
j. If IITB proposes changes that alter the process workflow of the implemented HMIS or exceed the scope of work related to the HMIS application, Vendor will provide time and effort estimates for IITB's approval. The vendor will only proceed with such changes after receiving formal approval from IITB on these estimates. Upon approval, Vendor will implement the necessary changes and deploy them on the production/live server(s) after verification by IITB, adhering to mutually agreed timelines to benefit the HMIS system and its users.
k. IPR of HMIS will remain solely with Vendor, while rights of customization carried out specifically for IIT Bombay instance will remain with Vendor and IIT Bombay.

l. The transfer of software ownership will be initiated by Vendor after the end of the first quarter of Year 3, contingent upon the clearance of all payment dues up to Year 2. IIT Bombay will identify their technical manpower resources (experts in Java , DB and related technologies) and inform Vendor to initiate knowledge transfer. Knowledge transfer will be facilitated through online sessions and as part of knowledge transfer activity, application software codes will be transferred to IIT Bombay as per T&C of this agreement.

m. As part of medical equipment interfacing scope, only those lab machines which are delivering numerical data through its hardware interface will be interfaced.

n. Penalties/ Liquidated damages, Indemnity and limitation of liability

Time is the essence of agreement. If Vendor fails to attain the Commissioning Certification / Go-Live within the time for completion or any extension thereof due to reasons attributable to Vendor, IIT Bombay shall recover the amount, by making deductions from Vendor's payables at the rate of 1% excluding taxes and duties per complete month of delay, up to a maximum of **10%** of the Software Customization, Software Development & Integrations component excluding GST. The Software Customization, Software Development & Integrations component mentioned here pertains to total 1st year cost for HMIS software as given in the payment terms. The quantum of liquidated damages is fixed in percentage of the contract price which is a genuine pre-estimate of the loss which would be incurred by IIT Bombay, as assessment of actual quantum of loss on account of failure to implement the project is not feasible.

However, extension of Execution / Delivery date may be considered wherever the reasons for delay are not attributable to Vendor. In such cases, all efforts shall be made to intimate the reasons for delay within 7 days of occurrence of events to the IIT Bombay with requisite documents. Such extensions of delivery date may be considered by IIT Bombay without Liquidated damages. However, the contract shall be extended without any penalties on either parties after achievement of commissioning / go-live, based on delay analysis in which the reasons for delay attributable to IIT Bombay or Vendor shall be finalized with mutual understanding.

9. Payment terms

Sr. No.	PO line item	Service line items	Item description	Proposed Timelines & Payment Milestones [P: PO release date]
1	Base HMIS Software	1	HMIS base Software installation	**Proposed timeline:** This deliverable is expected to be completed by P + 1-2 months. **Payment:** Within 30 Days after Vendor raises invoice on completion of installation of base software, and sign-off on the Base Software Completion certificate by IITB
2	Data migration	2	One time data handling and migration from existing systems. Year 1, Phase-1+2	**Proposed timeline:** This deliverable is expected to be completed in P+6 months **Payment:** Within 30 Days after Vendor raises invoice on completion and implementation of the Migration completed certificate by IITB.
3	Implementation and Go Live	3.1	Year 1: HMIS Software Development and customization Phase-1: HMIS modules	**Proposed timeline:** This deliverable is expected to be completed in P+6 months. **Payment:** Within 30 Days after Vendor raises invoice on completion and implementation of Phase-1, and sign-off on the Phase-1 Go-live certificate by IITB
		3.2	Phase-2: HMIS modules	**Proposed timeline:** This deliverable is expected to be completed in P+ 12 months **Payment:** Within 30 Days after Vendor raises invoice on completion and implementation of Phase-2, and sign-off on the Phase-2 Go-live certificate by IITB

4	On-site personnel	1	Year 1: On-site personnel	**Proposed timeline:** This deliverable is expected to be started from P + beginning of 5th month, till P+ end of 16th month (Total duration of 1 year) **Payment:** Within 30 Days after Vendor raises invoice on quarterly basis (after end of every quarter starting from P+beginning of 8th month) after deployment of resource onsite and satisfactory work output, as confirmed by IITB.
5	Medical Equipment Interfacing	5	Year 1, Phase-2: Medical Equipment Interfacing	**Proposed timeline:** This deliverable is expected to be completed on a real time basis and on exact quantity of equipments to be interfaced **Payment:** Within 30 Days after Vendor raises invoice on completion of interfacing of targeted equipment, and sign-off on the Interfacing completed certificate by IITB.Invoicing will be on per unit machine interfaced and released on Production.
6	API integration	6	Year 1, Phase-1: Patient data and Portal integration Year 1, Phase-2: Third party software integration	**Proposed timeline:** This deliverable is expected to be completed on a real time basis and on exact quantity of softwares to be integrated **Payment:** Within 30 Days after Vendor raises invoice on completion of integrating targeted softwares, and sign-off on the Integration completed certificate by IITB. Invoicing will be on per API released on Production.
7	Software support and maintenance	7.1	Year 1	**Proposed timeline:** This deliverable is expected to be started from the Go-live of Phase-1
		7.2	Year 2	

		7.3	Year 3	i.e. P+3 months **Payment:** Within 30 Days after Vendor raises invoice on a quarterly basis (after end of every quarter) for a period of 5 years, based on the sign-off on the quarterly satisfactory work done report by IITB.
		7.4	Year 4	
		7.5	Year 5	
8	Transfer of software ownership	8	Year 3: Transfer of software ownership	**Proposed timeline:** This deliverable is expected to be started from the 1st quarter of Year 3, or as per mutual agreement of IITB and vendor, and completed before the end of P+3rd year. **Payment:** Within 30 Days after Vendor raises invoice after completion of the transfer of ownership, based on the sign-off on the Transfer of software ownership certificate by IITB.