

Request for Expression of Interest (Eoi)
for
Electronic Patient Information System (ePIS) Project,
Ministry of Health (MoH)

Invited by:

IT Services Department, Thimphu TechPark Ltd.



Center of Excellence for IT

Thimphu

5th August 2020

TTPL/DITS/ePIS/2020/050801

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1 Introduction

The Ministry of Health, Royal Government of Bhutan, has invited Thimphu TechPark Ltd (TTPL) to implement the Electronic Patient Information System (ePIS) Project, which aims to transform the healthcare services delivery in Bhutan by harnessing the power of information and communication technologies (ICTs).

The ePIS will be implemented at the health facilities covering three referral hospitals, 46 hospitals, 186 Primary Health Centres (formerly BHU-IIs), 53 sub-posts, 542 Outreach Clinics, 3 Thromde Health Center, 6 Health Information Services Center and one Traditional Medicine hospital with 70 indigenous unit. All healthcare services in these facilities are provided free of charge by the Government of Bhutan.

Since TTPL lacks the experience in implementing a healthcare system of such scale and complexity, it intends to select an international partner with the relevant experience and expertise to undertake whole or part of the project jointly. This request for EoI is the first stage of the tendering process to select such a partner.

The potential firms will be shortlisted based on the EoIs submitted. The shortlisted firms will then be invited to submit technical and financial proposal through the RFP (Request for proposal) process.

As a baseline reference, a preliminary ePIS project requirements document covering functional, technical, resource requirements, development, deployment and support aspects is being furnished in Annexure-A. However, the requirements contained in this annexure are meant to give only a comprehensive high-level understanding of the technical and functional requirements, and are in preliminary in nature. The requirements may undergo certain changes during the actual implementation of the project. Interested firms are required to go through the relevant sections of Annexure A to understand the high-level technical and functional requirements and prepare the EOI accordingly.

About Thimphu TechPark Ltd

TTPL is a fully owned subsidiary of Druk Holding & Investments Ltd. (DHI), the commercial arm of the Government. TTPL began its operations on 7th May 2012 with two core mandates: 1) Attracting and facilitating FDI (Foreign Direct Investment) companies to lease commercial space within the first IT Park of Bhutan, and 2) Managing and operating the Bhutan Innovation and Technology Centre which consists of Bhutan's first business incubation centre and a Tier-2 Data Centre. The company did well in achieving these mandates and the Tech Park has been employing more than 600 people since 2016.

In 2018, DHI decided that the TTPL should evolve further and transform itself into a full-fledged information technology company. The DHI Roadmap adopted at the end of 2018 mandated TTPL to become an IT services provider – catering to companies within DHI Group as well as other clients. In line with that, TTPL started its new IT services department from 2019 and it now has around 50 IT professionals serving companies within DHI as well as the Government and other clients.

2 Existing

Currently the health care facilities in Bhutan lack an integrated and automated system. While several silo systems are in operation, major business functions remain manual and paper based. Further, the existing IT infrastructure with basic servers and communication facilities requires major re-haul to support proposed ePIS solution and integrate with national data hubs and related systems at line agencies.

3 Proposed ePIS solution

3.1 Functional aspects

The ePIS is proposed to be one core, automated, scalable and integrated software application suite, deployed centrally on Government Data Center (GDC), accessible through internet and lighter/ offline version accessible to all hospital staff through Internet Broadband / LAN/ WAN / Wi-F through web portal and mobile apps. The solution having capability to work on common architecture, configuration and functional modules should also support customization/configuration for various requirements of individual healthcare facilities. Further, the lighter version of ePIS will be required to cater to offline functioning for various key users through their end-point devices.

For ease of development, integration, maintainability and scalability, the application and its functionalities are proposed to design and develop based on Microservices architecture using open source tools.

Refer **Annexure-A** (under sections 3.1) for proposed ePIS functional solution covering functionalities, design principles, solution key features and adoption of recommended technologies.

3.2 Reports, KPIs and dashboards

Adhoc, periodical reports/KPIs and dashboards are critical requirements of ePIS solution for which an intelligent and open source tools for both data warehousing and reporting shall be configurable.

3.3 Technical aspects

Due to complexity, wider implementation requirements and sensitive nature of ePIS solution, it is emphasized to adopt a robust technical solution, taking into consideration future scalability, high availability, security, privacy, reliability, flexibility/extensibility, maintainability, reusability, interoperability and resilience.

Refer **Annexure-A** (under sections 3.2) for proposed technical solution covering technical architecture and stack, approach and required tools for design, development and deployment, performance tuning, etc.

4 Data migration and integration requirement

The proposed ePIS solution requires migration of data from existing silo systems and integration with external systems. Therefore, a comprehensive strategy for data migration and integration is required.

Refer **Annexure-A** (under section 4) for data sources and integration requirements for ePIS solution which vendor need to take as baseline and propose comprehensive strategy during tendering stage.

5 Solution deployment architecture

The ePIS is proposed to be one core, automated, scalable and integrated software application suite, deployed centrally on Government Data Center (GDC), accessible through internet and lighter/ offline version accessible to all hospital staff through Internet Broadband / LAN/ WAN / Wi-F through web portal and mobile apps.

Refer **Annexure-A** (under section 5) for solution deployment architecture for ePIS solution which vendor need to take as baseline and propose during tendering stage.

6 Solution deployment approach & implementation strategy

Based on Microservices architecture and adopting Agile development and implementation methodology, vendor is required to propose detailed strategy covering major phases, key activities, and deliverables etc.

Refer **Annexure-A** (under section 6) for solution deployment and implementation strategy for ePIS solution for which vendor need to take as baseline and propose during tendering stage.

7 Testing and acceptance

Owing to solution complexity, criticality and adoption of open source tools and Microservices architecture, a well-planned testing and acceptance strategy and procedures at every stage of solution development and deployment are key to successful delivery of the solution.

Refer **Annexure-A** (under section 7) for baseline testing and acceptance strategy. Vendor shall be responsible to study and propose accordingly during tendering stage.

8 Capacity building and change management

In order to ensure adequate capacity building of the TTPL technical team for solution development and application support to ensure client end users successfully operate ePIS, it is essential to chart out a comprehensive knowledge transfer (KT) strategy with detailed plan. Further, the strategy shall cover detailed change management plan at various stages of project for key stakeholders to embrace the changes without much resistances.

Refer **Annexure-A** (under section 8) for client requirements on capacity building and change management which the vendor needs to take as baseline and come up with a comprehensive strategy during RfP stage.

9 Project governance

Owing to solution complexity, larger implementation coverage, criticality and adoption of open source tools and Microservices architecture, well-organized project governance strategy with adequate representation of resources and clear-cut responsibilities are key factors for smooth and successful delivery of ePIS solution. Therefore, ePIS project execution requires a well-designed plan and manage it judiciously.

Refer **Annexure-A** (under section 9) for baseline project organization and client’s resources which the vendor needs to study and come up with project governance strategy during RfP stage.

10 EoI Response and Evaluation Criteria

10.1 Response format

The RfP for implementation of ePIS shall be released to only those interested and qualified firms possessing required capabilities to take up the project for which firms are required to study baseline requirements furnished in **Annexure-A** and respond accordingly to confirm the firm’s interest and capabilities to take up the project.

I – Company profile

The registered name of the company	:	
Year of incorporation	:	
Address for Corporate Office	:	
Contact person name & designation	:	

Contact person's phone nos. & email	:
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II - Questionnaire

1.	<p>Have you implemented a complete health care solution using open source tools and following Microservices architecture? If yes, provide details on the solution with valid references.</p> <p>Firm having past implementation experience in health care domain using open source tools and following Microservices architecture shall furnish a brief explanation of the project. The firm should justify functional, technical and architectural fulfillment of the solution for ePIS project. The firm should also express willingness to co-develop/customize based on required health care solution and provide all intellectual rights, documentations and source codes to TTPL:</p>
2.	<p>Have you implemented a complete software solution in other than health care domain using open source tools and following Microservices architecture? If yes, provide details on the solution with valid reference.</p> <p>Firm having past implementation experience in business domain other than health service using open source tools and following Microservices architecture shall furnish a brief explanation of the project. The firm should justify technical and architectural fulfillment of the solution for ePIS project. The firm should also express willingness to co-develop/customize based on required health care solution and provide all intellectual rights, documentations and source codes to TTPL:</p>
3.	<p>Have you implemented a complete COTS based health care solution using open source tools complying to requirement explained below? Provide details on the solution with valid reference.</p> <p>Firm having past implementation experience using COTS based health care solution which fulfills functional, technical and architectural requirements of ePIS and willing to co-develop/customize the solution using Microservices architecture along with TTPL, based on required health care solution and provide all intellectual rights, documentations and source codes shall furnish brief proposal:</p>
4.	<p>Based on ePIS requirements furnished under Annexure-A, provide firm's professional opinions on the following key areas: Project implementation in phase manner vs. big bang implementation modality with respect to functional modules and solution rollout at sites:</p> <p>Three years project duration has been proposed and agreed with client. Provide firm's opinion on project duration based on proposed ePIS requirements and firm's professional experience:</p> <p>Based on Microservices architecture proposed under Annexure-A, provide firm's professional opinions on maturity, popularity, practicality, scalability and suitability for health care automation solution:</p> <p>Various open source tools for design, development, database, analytics, DMS, etc. have been proposed for ePIS solution (refer Annexure-A), provide firm's professional opinions/suggestions with regard to ePIS project:</p> <p>Based on ePIS requirements (refer Annexure-A) and firm's experience, highlight some potential project risks foreseen for the proposed ePIS project:</p>

Provide firm's opinions/suggestions with regard to proposed TTPL and System Integrator (SI) project team compositions:

Any other pertinent opinion/suggestion:

10.2 Evaluation parameters/criteria

The RfP shall be released to those firms scoring a minimum of 70% (70 points) evaluated based on their EoI responses. The EoIs will be evaluated based on the following parameters/criteria and allotted points/weights:

SN	Parameter/ criteria	Weightage
1.	<p>This parameter will be evaluated based on whether the:</p> <p>A) Firm has past implementation experience in health care domain using open source tools and following Microservices architecture, and is willing to co-develop/customize based on ePIS requirements, and provide all intellectual property rights, documentations and source codes, or</p> <p>B) Firm has experience in other business domain automation system (if not in healthcare domain) using Microservices architecture and open source software tools and willing to co-develop/customize based on ePIS requirements and provide all intellectual property rights, documentations and source codes, or</p> <p>C) Firm has past implementation experience using Commercial Off The Shelf (COTS) healthcare solution which fulfills functional, technical and architectural requirements of ePIS and is willing to co-develop/customize the solution using Microservices along with TTPL, based on ePIS requirements and provide all intellectual property rights, documentations and source codes.</p>	0-60
2.	Firm's professional opinions on 3 years project duration and implementation modality (phase manner vs. big bang implementation modality with respect to functional modules and solution rollout sites).	0-8
3.	Firm's professional opinions on Microservices architecture maturity, popularity, practicality, scalability and suitability for proposed ePIS project.	0-8
4.	Firm's professional opinions on various open source software tools proposed for ePIS design, development, database, analytics, DMS, etc.	0-8
5.	Firm's professional opinions on potential project risks foreseen for the proposed ePIS project:	0-5
6.	Firm's professional opinions on TTPL and System Integrator's skill set proposed for the ePIS project	0-6
7.	Any other opinions/suggestions relevant and useful for ePIS project.	0-5

11 Eol Submission and Opening

11.1 Addressee for the Eol

The bidders must submit the duly signed original copy of the Eol document.

OR

The bidder can submit the Eol electronically with password protected compressed files/folder to ashis.subba@thimphutechpark.bt

Proposals to be addressed to and submitted to:

Ashish Subba
Dy. Procurement Officer
Thimphu TechPark Ltd
Wangchutaba.
Thimphu: Bhutan

11.2 Last date of submission

The Eol shall be submitted latest by 18th August 2020 before 11:00 (BST).

11.3 Eol Opening

The Eol shall be opened at 11:30 (BST) on the same date in the presence of the bidders or their authorized representatives. Passwords for the files should be shared during the opening.

11.4 Clarifications

Any clarifications should be addressed to ashis.subba@thimphutechpark.bt

All clarification should be submitted through emails only. The last date for seeking any clarifications is 11th August 2020. All the responses will be updated in the TTPL's website.

11.5 TTPL's right to accept or reject any proposal/response

TTPL reserves the right to annul this Eol and reject any proposals/responses at any time without requiring to furnish any reason.

11.6 Limit of this Eol

The scores and weightages obtained through this Eol process shall be limited to this Eol only and it will not be carried forward for the next process. Bidders submitting the EOI shall have no claim for, and shall not be entitled to, any compensation for efforts or expenses incurred in the preparing and submitting the EOI.

The attachment provided herein is for reference only and does not represent the final system requirement. The final system requirement will be shared to the shortlisted parties in the form of RfP.

12 Undertaking and signatory

The Eols should be accompanied by the following undertaking:

*As an authorized signatory, I, the undersigned, agree and **undertake that** to the best of my knowledge and belief, all information contained in this proposal and in the accompanying statements and documents are true, complete and correct.*

(Name and signature of authorized signatory)

Designation:

Email :

Phone No. :