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1. Background

The National Centre for Animal Health (NCAH), Serbithang is the apex body for animal health related issues in the country. The Centre is responsible for undertaking disease investigation, conduct animal health research and provide technical backstopping to all client agencies. Laboratory Service Unit is one of the units of the Centre dedicated to animal disease diagnosis and research. The Unit supports all other laboratories at regional, district and international borders for diagnosis and surveillance of animal origin disease. The Laboratory Unit being referral centre for confirmation of disease diagnosis, the routine activity involves receiving samples from clients such as farmers, wildlife agencies and other laboratories across the country. The samples are processed and diagnosis provided to clients. In the process a large volume of samples are handles every year. Laboratory analysis of samples requires varieties of laboratory chemicals, reagents, diagnostic kits and equipments. In order to efficiently manage laboratory functions there is a need to systematically record every activity performed and maintain inventory of laboratory gadget and consumables. A software database built to manage all these operation is essential. Use of laboratory information management system will immensely help in improving efficiency of laboratory operation.

2. Scope of Work

- Consultant shall design, develop/customize, install, test, implement and maintain a fully operational Laboratory Information Management System, based on the requirements stated in this tender document;
- Consultant shall provide quotations for maintenance and licenses for all software, applications and all other additional components necessary for a fully operational System;
- The Consultant shall provide Warranty and Maintenance support services for a period not less than 6 months after GO-live.

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- The Consultant shall Ensure Business Continuity with all the necessary services including backup and recovery processes/procedures;
- Ensure that the system meets the standard security requirement of web based application;
- Consultant should provide and update Standard Operating Procedure (User Manual) and Technical Information throughout the duration of the Contract; and
- The application code should be well documented prior to handing over of the system to Laboratory Service Unit, National Centre for Animal Health, Serbithang.
- Warranty. Provide minimum of 6 months of warranty after the user acceptance signoff. During this period, the vendor is responsible for following technical support:
 - Update patches,
 - Fix bugs,
 - Make some minor changes such as changing of label names, adding simple labels on the page and tweaking color combinations, etc.
- Ownership of Source Code: The National Center for Animal Health, Ministry of Agriculture, shall be the owners of the source code, Intellectual Properties and patent rights of the developed application. Vendor should provide all the source code of the developed application.

3. System Requirement

- The system should be web based application supporting all common browsers. Initially the application shall be implemented at Laboratory Service Unit, National Centre for Animal Health, Serbithang. However, there should be provision to roll out the application to other veterinary laboratories across the country.

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- The consultant shall comply with the Electronic Government Interoperability Framework(e-GIF)during the development of application. Following technologies and standardsare also recommended:
- Development Language:The application development is recommended to beimplemented using Open Source Languages framework based on PHP/Java.
- Database System: The database for the application is recommended to beimplemented using open source database management system. Preferred RDMA shall be MySQL Community Version.
- Database Design and Modeling: Comply with e-GIF Data standards such asTable naming conventions, data modeling, data types, codes, etc.
- The consultant shall adhere to following security requirements:
- Information should be both secure and available to those with a legitimate need for access in accordance with its classification level.
- The software should provide audit trails and logs mechanism for content changes performed by system users.
- Maintain time series data so that certain information is not lost with passage of time and repeated updating.
- Password should be encrypted using appropriate encrypting algorithm.

4. Functional Requirement

The system shall consists of following modules

- **Sample Management Module.** Samples in various forms such as blood, faeces, milk, body discharges, organs, body part, etc are collected from across the country and send to NCAH to test and diagnose the disease. These samples need to be identified using unique system generated ID or bar code and properly managed and tracked within the laboratory. System should have workflow for various tests and generating the Test Results. System should allow generating Interim Test Result and Final Test Result. The System should allow authorized

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personnel remotely accessing the status of sample analysis once the system goes online. Samples are stored and achieved on various Storage Facilities available at the Center. The system should have function to search for samples within the storage systems for easy location and retrieval.

- **Laboratory Inventory Management Module.** This module shall help center to keep inventory of various laboratory equipment, instruments and diagnostic test kits. It should have all the features of standard inventory management system.
- **Biological, Chemical and Reagent Management Module.** This module shall help center to keep inventory of various biologicals, chemicals and reagents at the center. It should have feature for Requisition, Issue, Consumption, Stock balance and Return of items. It should have feature to record Manufacturer details, Lot number, Catalogue number and Expire dates and should provide alerts on expired chemicals and reagents.
- **System Administration Module.** This module shall provide standard feature of system administration such as user creation and user role management, backup and restore, etc.

5. Deliverables

The following are deliverables of the assignment:

- Software architecture design document;
- User requirement document (SRS, incremental prototype);
- Maintenance, User Training, data recovery manuals;
- Source codes, database scripts, content, and relevant documentations to the client;
- Project completion report

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6. Instruction for Bidders

- The seal bid should reach the office of Programme Director, National Centre for Animal Health, Serbithang on or before **23rd May 2016** at 1 PM and shall be opened on the same day at **2: PM**.
- Decision of tender committee will be final and binding
- The seal bid should include valid trade license and tax clearance certificate, bid security in the form of demand draft in favour of Programme Director, National Centre for Animal Health, Serbithang issued from any reputable banks in Bhutan. The bid security amount shall be Nu. 20000.00 (Twenty Thousand) only.
- For any clarification on the bid contact Dr. Ratna Gurung, Head, Laboratory Service Unit or **Kuenzang Dorji (02 351083/17317877), NCAH, Serbithang during office hours**.
- The bidder should dedicate minimum of one system analyst, one designer and four software developers having not less than five years of work experience in software development using open source technologies.
- The bidder must submit the signed original CV with passport size photograph for all the team members for this project. This will be verified by the client during evaluation as well as during the execution of the project.
- The bidder can collaborate and partner with the foreign firms, but presence of local manpower is necessary to build up the capacity and competitiveness of the local firm to provide maintenance support to the system as and when required.
- The proposal should include the following:
 - Bid Submission Form
 - Financial Cost Summary as per the FORM FIN-1
 - Financial Cost Break Down as per the FORM FIN-2
 - A brief description of proposed Technical Approach and Methodology
 - Work Plan as per the FORM TECH-2

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- Proposed team composition and task assignment as per the FORM TECH-3
- CVs of the team members as per the FORM TECH-4

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7. Bid Submission Form

[*Location, Date*]

To: [*Name and address of Procuring Agency*]

Dear Sirs:

We, the undersigned, offer to provide the Consulting Services for [*Insert title of assignment*] in accordance with your Request for Proposal dated [*Insert Date*].

We are submitting our Proposal in association with: [*Insert a list with full name and address of each associated Consultant*]

We hereby declare that all the information and statements made in this Proposal are true and accept that any misinterpretation contained in it may lead to our disqualification. In this regard you may contact any of our previous Employers or the previous Employers of any of our sub-consultants or any of the employees thereof for further information.

The total price of our Bid, excluding any discount offered is:

If negotiations are held during the period of validity of the Proposal i.e. within 20 days from the date of this submission, we undertake to negotiate on the basis of the proposed staff. Our Proposal is binding upon us and subject to the modifications resulting from Contract negotiations.

We undertake, if our Proposal is accepted, to initiate the Consulting Services related to the assignment within 1 week from the receipt of confirmed order and comply with all the provisions of the Contract.

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If our Bid is accepted, we commit to provide a Performance Security equivalent to 10% of contract amount for the due performance of the Contract.

We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed.

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature [*In full and initials*]: _____

Name and Title of Signatory: _____

Name of Firm: _____

Address: _____

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8. FORM FIN-1: Summary of Costs

Sl. No	Description	Amount (Nu.)
1	Application Design, Development and Implementation	
2	6 months warranty support	
3	Total	

9. FORM FIN-2: Cost Breakdown

Sl#	Activity	Effort Estimation	Man Month Rate (Nu.)	Amount (Nu)
1	System Study and Analysis			
2	Design and Development			
3	UAT and Implementation			
4	Post Go-Live Support for 6 months			
5	Total			

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10. FORM TECH-1: Description of the Approach, Methodology and Work Plan

a) Technical Approach and Methodology. *In this chapter you should explain your understanding of the objectives of the assignment, approach to the services, methodology for carrying out the activities and obtaining the expected output, and the degree of detail of such output. You should highlight the problems being addressed and their importance, and explain the technical approach you would adopt to address them. You should also explain the methodologies you propose to adopt and highlight the compatibility of those methodologies with the proposed approach.*

b) Work Plan. *In this chapter you should propose the main activities of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Procuring Agency), and delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents, including reports, drawings and tables to be delivered as final output, should be included here.*

c) Organization and Staffing. *In this chapter you should propose the structure and composition of your team. You should list the main disciplines of the assignment, the key expert responsible, and proposed technical and support staff.]*

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11.FORM TECH-2: Work Schedule

N°	Activity ¹	Weeks													
		1	2	3	4	5	6	7	8	9	10	11	12	n	
1															
2															
3															
4															
5															

- Indicate all main activities of the assignment, including delivery of reports (e.g.: inception, interim, and final reports), and other benchmarks such as Procuring Agency approvals. For phased assignments indicate activities, delivery of reports, and benchmarks separately for each phase.
- Duration of activities shall be indicated in the form of a bar chart.

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12. FORM TECH-3: Team Composition and Task Assignments

Professional Staff			
Name of Staff	Area Expertise	of Position Assigned	Task Assigned

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13. FORM TECH-4: Curriculum Vitae (CV) for Proposed Professional Staff

1. **Proposed Position** [*only one candidate shall be nominated for each position*]: __

2. **Name of Firm** [*Insert name of firm proposing the staff*]: _____

3. **Name of Staff** [*Insert full name*]: _____

4. **Date of Birth:** _____ **Nationality:** _____

5. **Education** [*Indicate college/university and other specialized education of staff member, giving names of institutions, degrees obtained, and dates of obtainment*]: __

6. **Membership of Professional Associations:** _____

7. **Other Training** [*Indicate significant training since degrees under 5 - Education were obtained*]: _____

8. **Countries of Work Experience:** [*List countries where staff has worked in the last ten years*]: _____

9. **Languages** [*For each language indicate proficiency: good, fair, or poor in speaking, reading, and writing*]: _____

10. **Employment Record** [*Starting with present position, list in reverse order every employment held by staff member since graduation, giving for each employment (see format herebelow): dates of employment, name of employing organization, positions held.*]:

From [Year]: ____ To [Year]: _____

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Employer: _____

Positions held: _____

<p>11. Detailed Tasks Assigned</p> <p><i>[List all tasks to be performed under this assignment]</i></p>	<p>12. Work Undertaken that Best Illustrates Capability to Handle the Tasks Assigned</p> <p><i>[Among the assignments in which the staff has been involved, indicate the following information for those assignments that best illustrate staff capability to handle the tasks listed under point 11.]</i></p> <p>Name of assignment or project: _____</p> <p>Year: _____</p> <p>Location: _____</p> <p>Procuring Agency or Client: _____</p> <p>Main project features: _____</p> <p>Positions held: _____</p> <p>Activities performed: _____</p>
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13. Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes me, my qualifications and my experience. I understand that any willful misstatement herein may lead to my disqualification or dismissal, if engaged.

_____ Date: _____

[Signature of staff member or authorized representative of the staff] Day/Month/Year

Full name of authorized representative: _____

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