**PROPOSAL**

**SOFTWARE DEVELOPMENT FOR VETERINARY SERVICES FOR MPUMALANGA PROVINCE FOR A PERIOD OF 36 MONTHS**

**FOR**

**DEPARTMENT OF AGRICULTURE, RURAL DEVELOPMENT, LAND AND ENVIRONMENTAL AFFAIRS**

**BID NUMBER: ALA/546/23/MP**

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# Executive Summary

## Company background

Forek ICT Services is an ICT Service provider that was established in 2007, operating at 9 Piet Retief Street, Nelspruit. It was previously operating as Forek IT Services CC, but later registered as Forek Institute of Technology (PTY) Ltd in 2012.

Forek Institute of Technology is a dynamic, black owned information technology company, which was founded in 2007 by youth but matured technologists. The company focuses on software development, web development, network solution, IT Strategies and IT Security System. The company was founded by Ekson Fortune Sibiya who obtained a Bsc degree in Computer Science. He worked for AFRISAT as a Junior Software and Web developer for the period of one year where he developed a website for Mpumalanga Parks Board before it merged with MTA and he was also part of the development of Procurement System for Mpumalanga Parks Board.

He then established the company called Abamnyama Technologies where he was 50% share holder. Abamnyama Technologies developed a school management system that is managing the school records and the system is installed in 150 schools situated in Mpumalanga Province, Ehlanzeni region. In understanding the level of growth and participation in the frame of economy taking an advantage of young entrepreneurship, Ekson Fortune Sibiya established Forek IT Services.

Based on our experiences, the following key factors are important for ensuring a successful business engagement:

* Ensure proper Project Requirement Analysis
* Scheduled project delivery and release.
* Adhering to Operation Level Agreement (OLA)
* Value-add to client’s business needs by fine-tuning existing strategies.
* Ethical and sincere approach towards work.
* Our object-oriented commitment, thereby earning trust and respect. Commitment to client’s success.
* Continuous and steady improvement with a robust Business Continuity Plan.
* Commitment to business excellence, innovation, quality and speed with proper focus on results.
* Proper risk managements controls.
* Due maintenance/support of project after delivery
* Ensuring high Customer Satisfaction metrics

The company has a vast experience in working with Municipalities, Government Department, Parastatals, NGOs and Private Business in developing Websites, Networking Infrastructure Setup, Mobile, Desktop and Web-based systems. We also have extensive experience in the configuration and setup of IP Cameras, CCTV installation and many other peripheral devices.

## **Below is a list of Software Programmes that we have developed In-house**

* + 1. College Management System
    2. Tribal Authority System
    3. Project Profiling
    4. Mpumalanga Microloan Market
    5. Student Movement Management System
    6. Online Learners License Driving Booking System
    7. Ticketing System
    8. Helpdesk System

## **Our Services**

* + 1. Total ICT Outsource
    2. Software Development and Maintenance
    3. Website Development and Maintenance
    4. System Integration
    5. Networking
    6. Business Information Systems
    7. Developing Solutions for different businesses
    8. CCTV Installation and Maintenance
    9. Disaster Management
    10. ICT Governance
    11. Server Administration
    12. IT Auditing

## 

## **System Overview**

Based on the problem statement, we can develop a web and mobile-based information management system for veterinary services. The system will have the capability to:

* Store and manage data on farmers
* Store and manage Users data
* Store and manage Patient’s Information
* Store and manage Animal data and samples etc

Additionally, the system will have the capability to manage risk associated with the veterinary programme, including the usage of drugs, vaccines, medicines, laboratory supplies, movement of animals/products of animal origin, etc.

The system will have the capability to generate reports on the regional, provincial and national annual performance plans and progress reports on veterinary services projects and programmes.

The system will have the capability to store and manage data on clients/farmers/animal owners who benefited from the services and waste management contracts. The system will also have a client/farmer database that can be used to store and manage client/farmer data.

This system will also be equipped with the capability to report disease according to prescribed national and international norms and standards to relevant bodies, using notifications platforms like:

1. Emails
2. SMS
3. WhatsApp
4. Push Notifications

The system will have real-time data capture capability using (GIS) to enable efficient and effective data management.

## **Detailed Overview**

The **Veterinary Services Information Management System** is a comprehensive and integrated web or mobile-based solution that seeks to address the challenges associated with manual data management in the veterinary services sector. The system is designed to provide real-time data capture, management, and reporting capabilities for various stakeholders, including farmers/owners, patients/animals, laboratory technicians, veterinary officers, and regulatory bodies.

The system has multiple modules that provide a range of functionalities, including data management, risk management, reporting, and communication. The data management module allows the system to capture and manage information on farmers/owners,

patients/animals, and samples, including their medical history, test results, and treatment regimens. The risk management module enables the system to track the usage of drugs, vaccines, medicines, laboratory supplies, and the movement of animals/products of animal origin, ensuring compliance with national and international standards.

The reporting module generates reports on the provincial and national annual performance plans, progress reports on veterinary services projects and programmes, clients/farmers/animal owners who benefited from the services, and waste management contracts. The communication module allows for disease reporting to relevant bodies, using various communication channels such as emails, SMS, WhatsApp, etc.

The system's real-time data capture capability ensures efficient and effective data management, reducing errors, and improving decision-making. The system also has a client/farmer database that can be used to store and manage client/farmer data, improving customer relationship management.

Overall, the Veterinary Services Information Management System is a powerful tool that streamlines data management and reporting processes in the veterinary services sector, enhancing productivity, efficiency, and compliance with national and international standar

## **Proposed Solution**

The **Veterinary Services Information Management** **System** is an innovative and comprehensive solution that seeks to address the challenges associated with manual data management in the veterinary services sector. Our proposed solution provides real-time data capture, management, and reporting capabilities for various stakeholders, including farmers/owners, patients/animals, laboratory technicians, veterinary officers, and regulatory bodies.

The solution has multiple modules that provide a range of functionalities, including data management, risk management, reporting, and communication. Our solution aims to streamline processes, reduce errors, and enhance communication among stakeholders, leading to improved animal health and welfare.

**Introduction:**

We are pleased to present our proposal for the Veterinary Services Information Management System, which is designed to revolutionize the management of veterinary services activities. The proposed system is a web or mobile-based solution that addresses the challenges associated with manual data management, risk management, reporting, and communication in the veterinary services sector. Our solution provides an innovative approach to the management of veterinary services activities, ensuring that animal health and welfare are prioritized.

**Project Description:**

The Veterinary Services Information Management System is an integrated solution that provides real-time data capture, management, and reporting capabilities for various stakeholders. The solution comprises multiple modules, including:

• **Data Management Module:** This module enables the system to capture and manage information on farmers/owners, patients/animals, and samples. The module allows the system to track animal health status, veterinary services provided, and laboratory test results.

• **Risk Management Module:** This module is designed to manage risk associated with the veterinary programme, including the usage of drugs, vaccines, medicines, laboratory supplies, movement of animals/products of animal origin, etc. The module provides risk assessment tools, risk mitigation strategies, and real-time monitoring capabilities to ensure compliance with regulatory requirements and best practices.

• **Reporting Module**: This module provides various reporting functionalities, including provincial and national annual performance plans, progress reports on veterinary services projects and programmes, disease reporting according to prescribed national and international norms and standards, and client/farmers/animal owners who benefited from the services.

• **Communication Module:** This module allows the system to communicate with various stakeholders using emails, SMS, WhatsApp, etc. The module provides a platform for the exchange of information, including alerts, notifications, and updates on veterinary services activities.

## **Key Benefits**

The Veterinary Services Information Management System offers several benefits, including:

• Improved data accuracy and completeness

• Streamlined processes

• Enhanced risk management

• Improved reporting capabilities

• Efficient communication among stakeholders

• Improved animal health and welfare

**Methodology:**

Our proposed methodology for the implementation of the Veterinary Services Information Management System comprises the following phases:

• **Requirement Gathering**: We will engage stakeholders to identify their requirements and expectations for the system in accordance with the Problem-Statement and the Objectives as outlined.

• **System Design**: We will design the system architecture, user interfaces, and workflows based on the requirements gathered.

• **System Development**: We will develop the system using agile development methodologies to ensure that the system meets the stakeholders' requirements.

• **System Testing**: We will perform comprehensive testing of the system to ensure that it is error-free and meets the stakeholders' expectations.

• **System Deployment**: We will deploy the system on the client's servers or cloud infrastructure – we highly recommed **Microsoft Azure** as the System will be build using Microsoft Technologies **(C# ASP.NET Core)**.

• **User Training**: We will provide user training to stakeholders to ensure that they can use the system effectively.

• **Maintenance and Support**: We will provide ongoing maintenance and support for the system to ensure that it operates optimally.

**Project Timeline:**

Our proposed timeline for the implementation of the Veterinary Services Information Management System is as follows:

• **Requirement Gathering**: 2 weeks

• **System Design**: 3 weeks

• **System Development**: 12 weeks

• **System Testing**: 3 weeks

• **System Deployment**: 1 week

• **User Training**: 1 week

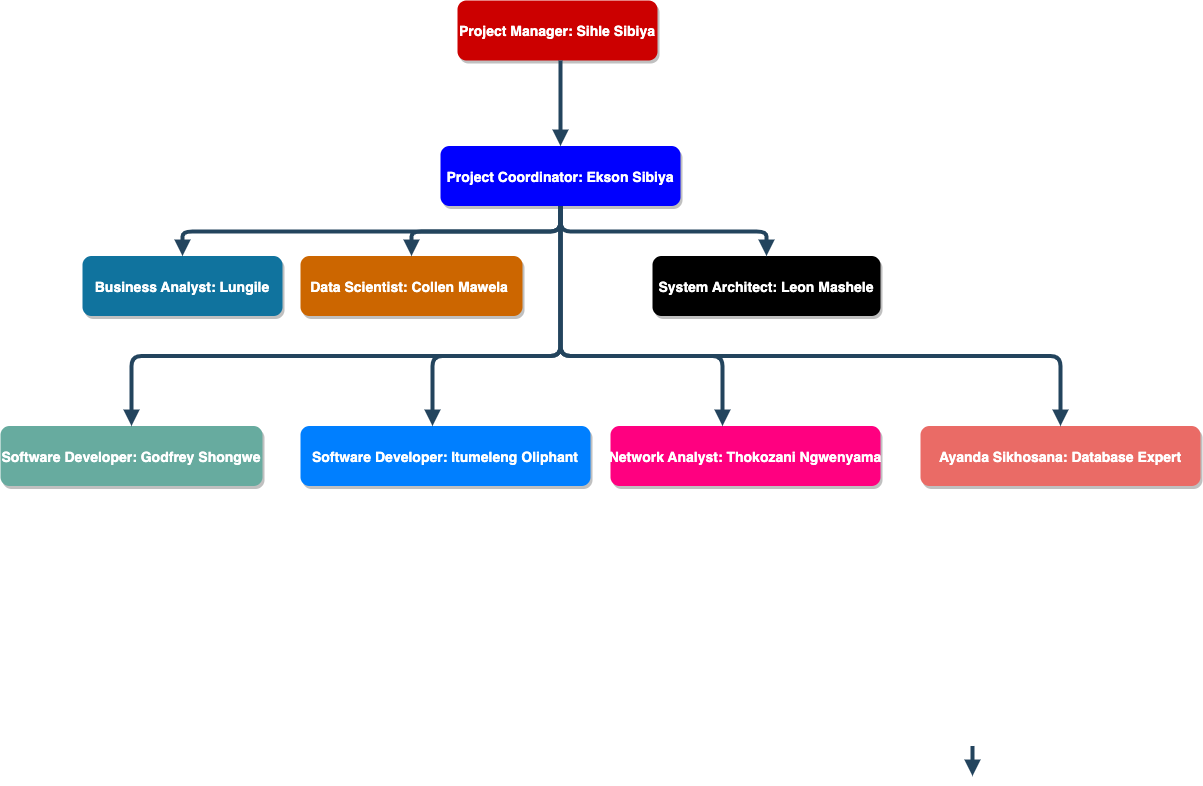
• **Maintenance and Support**: Ongoing

**Conclusion:**

We believe that our proposed solution for the Veterinary Services Information Management System is comprehensive and innovative and will provide significant benefits to the veterinary services sector. We look forward to working with you to implement the system and improve animal health and welfare.

|  |  |  |
| --- | --- | --- |
| CLIENT NAME | SERVICE DETAILS | CONTACT |
| 1. Department of Community Safety, Security and Liaison | **Development of the Complaints Management, and Tracking System** | **Contact: Mr M Vuma**  **Tel: 013 755 4384** |
| 1. Mbombela Local Municipality partnership with BCX | **Total Outsource of ICT Support** | **Contact: Mr Mahesh**  **Tel: 013 759 9111** |
| 1. Victor Khanye Local Municipality | **Total Outsource of ICT Support** | **Contact: John Thwala**  **Tel: 013 665 6000** |
| 1. Mbombela Local Municipality. | **Development of dynamic website and Intranet.** | **Contact: Mr. Joseph Ngala**  **TEL: 013-759 2378** |
| 1. Department of Human Settlement | **Development and Implementation of Profiling Management System, the system is responsible for profiling of job applicants.** | **Contact: Mr. Oriel Singwane**  **TEL: 013-766 6855** |
| 1. Department of Economic Development, Environment and Tourism | **Development and Implementation of Project Profiling System, the system is responsible for capturing the data for all provincial projects.** | **Contact: Innocentia Sithole**  **TEL: 013 766 0000** |
| 1. Department of Culture, Sport and Recreation | **Design and Installation of security system, the system for anti-theft book devices that is responsible for monitoring of in and out books in the library. The system is installed in four libraries.** | **Contact: Mr Musa Sambo**  **TEL: 013-766 7024** |
| 1. Victor Khanye Local Municipality | **Development of the Municipality Website** | **Contact: John Thwala**  **Tel: 013 665 6000** |
| 1. Victor Khanye Local Municipality | **Forek Help Desk Management System** | **Contact: John Thwala**  **Tel: 013 665 6000** |
| 1. Department of public Works, roads and transport | **Development of the Departmental Website** | **Contact: Mr E Sigudla**  **Tel: 013 766 6696** |
| 1. Mbombela Municipality | **Development of Mbombela FIFA World cup 2010, website** | **Contact: Mr Mahesh**  **Tel: 013 759 9111** |
| 1. Mbombela Municipality | **Website Development and Maintenance** | **Contact: Mr Mahesh**  **Tel: 013 759 9111** |
| 1. Nkomazi Local Municipality | **Development of Website and Intranet** | **Contact: Mr Jerry Khoza**  **Tel: 013 790 0245** |
| 1. Mpumalanga Regional Training Trust | **Development of Website and maintenance** | **Contact: Ms Zanele**  **Tel: 013 656 0875** |

## Company Organogram

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## **Platforms Supported**

The proposed system will be developed using these technological-stack whilst also adhering to the **SDLC** (System Development Life Cycle):

a) **Front-end Technologies**:

* HTML5, CSS3, Bootstrap 5.2.0 & Razor Pages
* JavaScript, JQuery, AJAX (Asynchronous JavaScript and XML)

b) **Back-end Technologies & Frameworks:**

* C# .NET 6
* .NET Core MVC + .NET MVC

c) **Database:**

- Microsoft SQL Server 2019

- Export to Microsoft Azure (Cloud)

d) **Reporting**:

* RDLC Reports (Functionality to export file as Word, Excel or PDF)
* Crystal Reports (Functionality to export file as Word, Excel or PDF)

## **Hardware Support**

**Server:**

**Preferably** (SQL Server 2019 on Microsoft Azure Cloud)

**Alternative Server:**

Intel Xeon processor or equivalent

32GB RAM or more

RAID 1 or RAID 5 for data redundancy

500GB SSD or more for system drive

1TB or more HDD for data storage

**Client:**

* Desktop or laptop computer with Windows 10, macOS, or Linux
* Web browser (Google Chrome, Mozilla Firefox, Safari)
* Minimum screen resolution of 1366x768 pixels

**Mobile:**

* Android or iOS smartphone or tablet
* Mobile web browser (Google Chrome, Safari, Microsoft Edge)
* Minimum screen resolution of 720x1280 pixels

**Network:**

* LAN or WAN with minimum 100 Mbps bandwidth
* Router, switches, and cables as required.
* Firewall and antivirus software

Note: These are minimum hardware requirements, and the actual hardware configuration may vary depending on the size of the organization, the number of users, and the workload.

## **Project Implementation plan**

|  |  |  |  |
| --- | --- | --- | --- |
| **Deliverable** | **Description** | **Responsible** | **Duration** |
| Project Initiation Phase | This is phase where the Contract is awarded and Forek ICT sign an SLA with the Department | * Forek Project manager * The Department IT Representative * Project Coordinator | 7 days |
| Project Planning Phase | Content Planning and Development, necessary research and information gathering. Develop the project plan to guide the rolling out of the system. | * Project manager * The Department IT Representative * Project Coordinator * Programmer X2 * Systems Analyst & Design X 2 * Business Analyst * Graphic Designer | 15 days |
| As-Is Analysis Phase | On this phase we define the current systems in place that are been used by The Department and identify the gaps in the system. | * The Department Project Manager * FOREK Project Manager * Project Coordinator * The Department IT Representative * Programmer X2 * Systems Analyst & Design X2 * Business Analyst * Graphic Designer | 44 days |
| To be Document Phase | Design the main page layout, arrange links and design the database tables. Submitting a proposed document that maps the actual requirements to answer the Department system requirements based on the AS - IS ANALYSIS. | * The Department Project Manager * FOREK Project Manager * Project Coordinator * The Department IT Representative * Programmer X2 * Systems Analyst & Design X2 * Business Analyst * Graphic Designer | 22 days |
| Requirement Analysis Phase | On this phase an Analyses the user needs and develops user requirements is done.  Create detailed functional requirements document. | * The Department Project Manager * FOREK Project Manager * Project Coordinator * The Department IT Representative * Programmer X2 * Systems Analyst & Design X2 * Business Analyst * Graphic Designer | 22 days |
| Designing Phase | In consultation with the Department IT/CIO Directorate, design and develop the system based on the proposed system requirements and in accordance with the proposal scope of Work.  Transforms detailed requirements in to complete, detailed system specifications. Focuses on how to deliver the required functionality | * -Project Manager * Project Coordinator * The Department Project manager * Systems Analyst & Design X2 * Business Analyst | 22 days |
| Programming Phase | Converts a design into a complete SYSTEM.  Include acquiring and installing systems environment, creating  and testing databases/ preparing test case procedures; preparing test files; coding; compiling; performing test readiness review and procurement activities. | * Project Manager * Project Coordinator * Programmer x 2 | 66 days |
| Testing Phase | Demonstrates that the developed system conforms to requirements as specified in the FRD. | * Systems Tester * Project Manager * Project Coordinator * The Department Project manager * Programmer X 2 * System users * Network Analyst & Technical Support X 2 | 22 days |
| Deployment and configuration Phase | Includes deployment preparations, deployment of the system into a production environment, resolution of problems identified in the integration and test phase | * Systems Tester * Project Manager * Programmer X 2 * Project Coordinator * The Department Project manager * System users * Network Analyst & Technical Support | 5 days |
| Training and Skills Transfer | Providing Training to system users and to IT Specialist. | * Business Analyst * The Department Project Manager * System Users | 10 days |
| System maintenance and support | To provide day to day troubleshooting and maintenance. | * Network Analyst & Technical Support | 24 months |

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# Resources.

## Key Resources & Qualifications

|  |  |  |  |
| --- | --- | --- | --- |
| PERSONNEL | Qualification | Responsibility | Years of experience |
| Dr Sihle Sibiya | PhD | Project Mana ger/Testing | 15 |
| Ekson Sibiya | BSc (Computer Science) | Project Coordinator | 13 |
| Lungile Luthuli | Adv Dip (IT) | Business Analyst | 7 |
| Collen Mawela | BTech (IT) | Programmer | 15 |
| Thokozani Ngwenyama | BSc (Hons) IT | Network Analyst and Technical Support | 15 |
| Godfrey Shongwe | Dip (IT) | Programmer | 15 |

# Pricing Schedule

## Summarised Resources Rates for the whole Project and Cost

|  |  |  |  |
| --- | --- | --- | --- |
| PERSONNEL | Number of days | Rate per hour | Hours per day |
| Dr Sihle Sibiya | 225 | R 1,200.00 | 8 |
| Ekson Sibiya | 225 | R 1,021.00 | 8 |
| Lungile Luthuli | 135 | R 950.00 | 8 |
| Leon Mashele | 125 | R 912.00 | 8 |
| Collen Mawela | 196 | R 950.00 | 8 |
| Godfrey Shongwe | 196 | R 950.00 | 8 |
| Thokozani Ngwenyama | 555 | R650 | 8 |
| Ayanda Sikhosana | 555 | R650 | 8 |

## Cost Analysis

|  |  |  |
| --- | --- | --- |
| **ITEM** | **DESCRIPTION** | **AMOUNT** |
| PHASES | Project Initiation Phase | **R 252,000.00** |
| Project Planning Phase | **R 1,392,000.00** |
| As-Is Analysis Phase | **R 3,907,200.00** |
| To be Document Phase | **R 1,953,600.00** |
| Requirement Analysis Phase | **R 1,633,600.00** |
| Designing Phase | **R 1,531,200.00** |
| Programming Phase | **R 3,643,200.00** |
| Testing Phase | **R 1,513,600.00** |
| Deployment and configuration Phase | **R 344, 000.00** |
| Training and Skills Transfer | **R 400,000.00** |
| System maintenance and support | **R 9,715,200.00** |
| **TOTAL** | | **R 26,285,600.00** |
| **VAT** | | **R 3,942,840.00** |
| **GRAND TOTAL** | | **R 30,228,440.00** |

* 1. **Monthly Service Level Agreement (Cost Per Month)**
     1. The monthly SLA will be R 404,800.00 Deduced from the Maintenance and support amount.