Request for Information (RFI) 2025-9-1

Cloud-Based Laboratory Information Management System (LIMS)
Department of Agriculture – Food Safety and Plant Industry Bureaus

RFI Issue Date: 09/10/2025

Response Due Date: 10/10/2025

RFI Number: TBA

1. Background

The mission of the Bureau of Food Safety and Bureau of Plant Industry Laboratory Services is to protect and keep food safe, from the farm to the fork, by educating, regulating and ensuring compliance with food safety laws and regulations. The Bureau has several divisions where each provides important oversight to the production and service of safe food.

The laboratory provides testing services for the regulatory divisions of the Bureau of Food Safety and Laboratory Services (BFSLS) and the Bureau of Plant Industry (BPI). The laboratory provides analytical testing support to other units within the Department of Agriculture as requested. For human food, animal feed, fertilizer, pesticide drift/misuse, related complaints, and requests for testing, please refer to the applicable regulatory division to address your concerns.

The laboratory services division is comprised of two sections and maintains relationships with other states and federal partners to provide a wide array of capabilities:

The Microbiology Section provides direct analytical support for the programs administered by our regulatory partners by providing routine and emergency outbreak related testing of human food and animal feed for pathogenic organisms such as: *Salmonella species*, *Listeria monocytogenes*, enterohemorrhagic and Shiga toxin producing *E. coli, Campylobacter species*, *Staphylococcus aureus* and enterotoxins, and *Bacillus cereus*. The microbiology section is also certified as the approved State Central Dairy Regulatory Laboratory for the FDA Interstate Milk Shippers (IMS) Program. As such, the laboratory supports regulatory programs for Grade A Milk; maintains the capacity to perform official antibiotic drug residue testing, somatic cell counts, microbiological indicator organism enumerations, and pasteurization efficiency testing; and prepares proficiency testing samples for other approved dairy testing laboratories within Pennsylvania.

The Chemistry Section provides direct analytical support for the programs administered by our regulatory partners by providing routine and complaint driven chemical testing in human food and animal feed for the following: nutrient metal formulation, toxic metal contamination, pesticide residues, drug residues and animal feed drug formulations, toxins such as aflatoxin and DON, and other suspected chemical contamination. The chemistry section also provides routine analysis of agronomic products such as fertilizer, liming material, and formulated pesticide products for adherence to label guarantees. The section supports investigations into pesticide drift or misuse by testing soil, vegetation, and water for pesticide residue and collaborates with the Chemsweep initiative by testing samples to help identify unknown chemicals suspected of being old or discarded pesticides for proper disposal.

2. Introduction

The PA Department of Agriculture (PDA) is seeking information from qualified vendors regarding cloud-based Laboratory Information Management Systems (LIMS) to support the operational, regulatory, accreditation, and analytical needs of the Department's Bureau of Food Safety and Bureau of Plant Industry Bureau's laboratory services. This RFI is issued solely for information and planning purposes and does not constitute a solicitation or a promise to issue a solicitation in the future or commit PDA in any way.

3. Objectives

PDA is exploring the acquisition of a modern LIMS solution to support its Food Safety and Plant Industry Bureau's laboratories mission. The objective is to implement a technology platform that enables the following:

A. Modernization of the Existing Aging Technology and Infrastructure

Replacement of the current legacy system which is operating on aging technology and infrastructure and lacks the configurability, and capabilities provided by modern LIMS systems.

B. Operational Efficiency and Automation

Streamline and automate essential laboratory processes such as sample management, testing workflows, quality control, and reporting to reduce turnaround times and boost throughput through configurable automated workflows.

C. Enhanced Regulatory Compliance

Meet and exceed compliance requirements for federal, state, and industry standards (e.g., ISO/IEC 17025, FDA, EPA, USDA) through features like electronic signatures, secure audit logs, and chain of custody tracking.

D. Centralized Data Management

Consolidation of all laboratory-related data, including sample information, test results, instrumentation records, and user activity, into a single, accessible system.

E. Data Accuracy and Integrity

Ensure accurate, consistent, and traceable laboratory data through automated data capture, standardized workflows, and robust audit trails, reducing human error and manual input.

F. Real-Time Integration and Interoperability

Enable integration with laboratory instruments, ERP systems, other LIMS platforms, Commonwealth and external systems for efficient, real-time data exchange and interoperability.

G. Scalability and Configurability

Provide a flexible system architecture that can scale to meet the demands of growing lab operations, multi-site implementations, or evolving analytical and regulatory needs.

H. Data Quality Security and Privacy Protection

Provide validation and data management capabilities to enhance ongoing data quality. Safeguard sensitive data through encryption, role-based access control, and compliance with standards such as NIST, FedRAMP, and HIPAA to ensure confidentiality and data integrity.

I. Enhanced Reporting and Analytics

Offer advanced analytics, customizable dashboards, and automated reporting to support real-time monitoring, compliance tracking, and strategic decision-making.

J. Enhanced Analytics Supporting Operational and Scientific Decision-Making

Leverage robust analytical tools to uncover trends, identify performance gaps, and inform both scientific assessments and operational improvements through predictive insights and data modeling.

K. Support for Disconnected and Field Operations

Enable offline data collection and subsequent synchronization for mobile labs and field personnel, ensuring consistent data capture regardless of connectivity status.

L. Enhanced User Experience

Intuitive user interfaces with consistent navigation and accessibility.

M. Cost-Effectiveness and Return on Investment

Reduce costs linked to manual workflows, redundant systems, compliance violations, and data inaccuracies, while enhancing productivity, resource utilization, and long-term system value.

N. Enhanced Geospatial Capabilities.

Ability to capture and leverage geo-spatial data to support advanced geo-spatial solutions.

3. Key Requirements

Each interested vendor should provide an assessment/presentation that outlines their ability to address the following requirements in writing.   Vendors can provide information on capabilities that are in development but must indicate that those functions are not immediately available. Vendors are encouraged to provide an overview of how their solution addresses the needs of PDA and the estimated ROI impact including both hard and soft metrics.

- **Functional Requirements**
- Support full lifecycle of lab process. Including but not limited to intake, analysis, validation QA, reporting and analytics.
- Cloud-based deployment with high availability and scalability.
- Integration with multiple generations of scientific laboratory equipment and IoT-enabled instruments.
- Support for barcode, RFID, and other electronic input/monitoring tools.
- Compliance with ISO standards, FSMA, and other accreditation frameworks (e.g., A2LA, NELAP).
- Seamless chain of custody monitoring using connected ontologies.
- Sample status tracking throughout life cycle.
- Realtime KPI tracking.
- Real-time inventory management with automated alerts.
- Full support for electronic and digital signatures.
- Integration with ESRI GIS solutions with bi-directional data exchange.
- Integration with the Agency's operational platform (Standardize Approach for Effective and Harmonized Exchange of Regulatory Information).
- Integration with the Commonwealth's electronic payment gateway.
- Integration with Commonwealth SSO
- Address validation and geospatial data capture.
- Integration with key internal and external systems.
- Intuitive and efficient user interfaces.

- **Reporting and Business Intelligence**
- Intuitive reporting capabilities highlighted any embedded BI tools for reporting and advanced dashboards.
- KPI and performance metric tracking.
- Analytics supporting business and scientific decision making.
- Monitoring QA processes and customer satisfaction metrics.
- Accreditation readiness and audit support.

- **Security and Compliance**
- Compliance with NIST Cybersecurity Framework, ISO 27001, HIPAA/HITECH.
- Validated SOC 2 assessments.
- Support for Single Sign-On (SSO), multifactor authentication (MFA), and biometric identity verification.
- Advanced data encryption at rest and in transit.
- Adherence to the Commonwealth policy requirements

- **Accessibility and User Interface**
- Compliance with WCAG 3.0 and accessibility guidelines.
- User-friendly, intuitive interface designed for field and lab users.
- Native collaboration features and role-based user dashboards.

- **Workflow, Configuration, and Development**
- Configurable and intelligent workflow engine for task assignment, resource allocation, and real-time tracking
- Workload distribution management
- Robust business configuration options to minimize custom development.
- Low-code/no-code capabilities for required customization.
- API-driven architecture for integration with third-party platforms.
- Support for address validation and geospatial data.

- **Technology and Scalability**
- AI and machine learning support predictive analytics and test automation.
- Scalable to support multiple labs and bureau-specific processes.
- Advanced data integrity checks and audit trails.
- Version control and historical data management.

- **Training and Support**
- Comprehensive user ,administrator training and ongoing support.

- **Commonwealth Policy Compliance**
- Solution must align with all Commonwealth IT and operational policies.

4. Vendor Information Requested
1. Company Overview – financial stability, years in business, relevant experience.
2. System Overview – solution architecture and hosting model.
3. Functional Capabilities – response to requirements in Section 3.

4. Security & Compliance Posture – certifications, security practices.
5. Integration Capabilities – APIs, GIS, EMR, and payment gateway support.
6. Accessibility Features – WCAG compliance documentation or VPAT.
7. Workflow & Configuration – automation tools and customization options.
8. Case Studies or References – similar implementations.
9. Total Cost of Ownership (Optional) – licensing, implementation, and support costs.
10. ROI and Value – Exhibit showing hard and soft return on investment.

5. Response Instructions

Interested vendors should provide a written response including the following:

1. **Company Information**
   - Legal entity name, address, and primary contact.
   - Company background and relevant sector experience.
   - Summary of customers served in government, agricultural, and laboratory environments.
2. **Solution Overview**
   - Description of the proposed LIMS platform.
   - System architecture and deployment model.
   - Alignment with stated capabilities including AI, automation, document management, and compliance.
   - Overview of available demos.
1. **Security, Data Residency, and Interoperability**
   - Documentation of compliance with security, privacy, and accessibility standards.
   - Statement affirming all data storage and personnel servicing requirements are met within the continental U.S.
   - Description of capabilities to support PDA's integration requirements, including but not limited to **NFSDX**, SAFHER, and ESRI GIS platforms.
   - Explanation of data security, validation, and transport standards used for secure data exchanges.
2. **AI and Innovation Features**
   - Overview of AI/ML capabilities embedded in the solution.
   - Use cases for predictive analytics, risk analysis, or workflow optimization.
1. **E. Support and Roadmap**
   - Product roadmap (3 years), with emphasis on innovation and compliance enhancements.
   - Summary of implementation, onboarding, and training approach.
   - Description of service levels, support models, and customer success practices.

11. Financial and Organizational Qualifications

The company must demonstrate:

- Financial soundness (audited financial statements preferred).
- Experience delivering enterprise LIMS to the public sector, agricultural, or food safety laboratories.
- References from at least three successful deployments in similar operational environments.
- Comprehensive customer support and training offers.

F. Pricing Structure Overview of pricing model (subscription-based, license, usage-based, etc.)

Estimated total cost of ownership for a lab of comparable size and scope. The Vendor is encouraged to provide estimated ROI including hard and soft benefits their solution would provide.

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5. Submission Details

- **Responses must be submitted by**: **5 P.M. Eastern on 10/10/2025**
- **Submit to: The Pennsylvania Department of Agriculture**
  - **Attn: Sheila Strubhar**
  - **Email: sstrubhar@pa.gov**

All questions regarding this RFI must be submitted in writing via email no later than **9/24/2025.** Responses will be kept confidential and may be used for planning for potential procurement.

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6. Disclaimer

This RFI is for planning purposes only and does not oblige the Department to award a contract. Responses will help the Department assess viable solutions and shape future procurement strategy.