

Case Study: MLIS for Community Cancer Center

Client Requirements

Client is a leading life sciences informatics company that does advanced genomics research for a community cancer center.

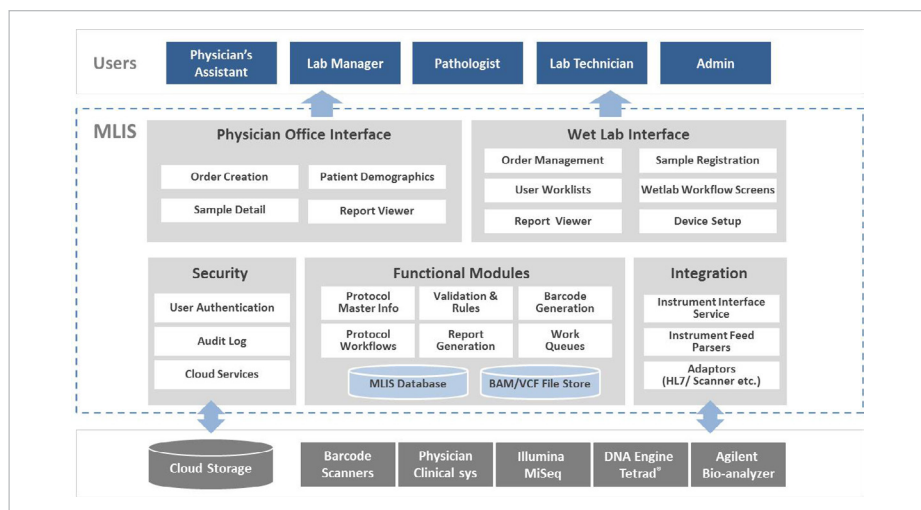
Client wanted to develop a custom Molecular Laboratory Information System (MLIS) for low/medium throughput NGS processing, in a standardized manner, for test orders from clinical and research environments. The MLIS which would manage end-to-end dry and wet lab workflows, needed to be CAP, HIPAA and HITECH compliant and also be capable of adapting to new and emerging standards.

Given its strong expertise in clinical informatics, interoperability and cloud computing, Citiustech was selected to develop browser based MLIS application.

Development and Deployment

Citiustech developed the MLIS application as a client-server model with 3-tier architecture:

- **The User Interface Layer:** Comprised of lab interface, physician interface, billing interface, admin interface and genome browser as a primary user interaction touch points from desktop
- **The Business Layer:** Comprised of implementation logic, authentication, authorization, key store, audit, integration with third party tools, etc.
- **Data Layer:** Provided abstraction over data storage, both on-premise and cloud. It also facilitated -
 - File storage to local repository and on-cloud
 - NGS tool integration
 - Schema design to support variability (evaluate NoSQL options)
 - Data storage to support hybrid cloud model and on-cloud analytics and notifications



Citiustech Solution

Solution Design

Citiustech developed a cloud based MLIS application that could handle large amounts of data from molecular testing and sequencing. The scalable, secure MLIS could perform functions including physician office order entry, lab management, wet lab workflows, instrument integration, results validation and report delivery.

Value Delivered

By partnering with Citiustech, the client was able to:

- Implement a scalable, adaptable browser based MLIS for genome analysis and test order processing
- Support storage and analytics across multiple data formats (raw files, variants, etc.)
- Develop powerful user capabilities for orders, specimen tracking, interpretation, genomics analysis

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About Citiustech

Citiustech is a specialist provider of healthcare technology services and solutions to medical technology companies, providers, payers and life sciences organizations. Citiustech's services and solutions include healthcare software development, healthcare interoperability, regulatory compliance, BI/analytics, consumer engagement, care coordination and population health management.

Citiustech helps customers accelerate innovation in healthcare through a number of solutions and accelerators for clinical quality reporting, healthcare big data, cloud computing, mobile health and predictive analytics. With cutting-edge technology expertise, world-class service quality and a global resource base, Citiustech consistently delivers best-in-class solutions and an unmatched cost advantage to healthcare clients worldwide.

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