LOMT Pool Testing

Laboratory Optimizer for Mass Testing

Benefits

- Easily extend existing testing processes with sample pooling
- Reduce the number of assays and the reagent consumption
- Reduce manual labor, tiredness, and risk of human error
- Reduce testing cost by up to 15x and time by up to 6x
- Test more people with the existing resources.

Product Overview

Laboratory Optimizer for Mass Testing manages pool testing workflows for molecular diagnostics or other qualitative testing methods in the epidemiological monitoring, mass screening, and clinical diagnosis for COVID-19 and other infectious diseases. By using advanced pool testing algorithms and advanced data analytics, LOMT allows laboratories to reduce testing cost and time and increase capacity by up to 30x.

Product Features

Complete Digitalization of the Testing Workflow

LOMT automatically determines the optimal pooling strategy depending on the prevalence and operational constraints, designs pool mixing protocols, tracks specimens, pools, and assays, and decodes the results of completed assays.

Advanced Pooling Algorithms

LOMT supports several algorithms from plain Dorfmal pooling to more complex algorithms with probability analysis for different use cases and conditions, including:

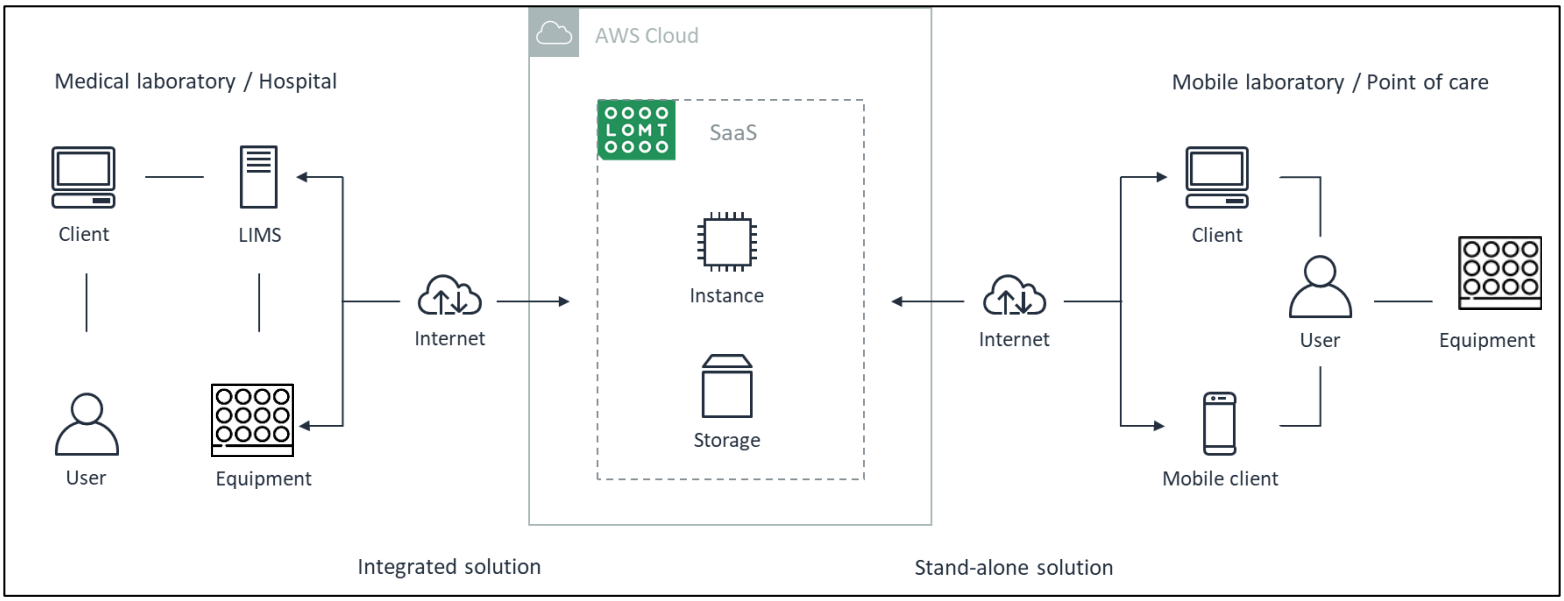
- Combinatorial pooling allowing to quickly obtain near to 100% of results in a single stage for a low prevalence
- Binary splitting allowing a significant reduction of the number of tests even for a 10% prevalence and higher

Multi-condition Segmentation

By analyzing sample data, LOMT organizes samples into segments with different prevalence and testing conditions in order to select the optimal pooling strategy for each segment or fall back on individual testing if pooling cannot be efficient.

How it works

LOMT extends existing standard testing processes by introducing additional steps of pooling design, mixing samples into pools, decoding the result of pools, and reporting the results of samples. Depending on the goals and conditions of the testing, these steps can be performed in the laboratory during the testing or outside the laboratory at the point of care or sample collection point. The software can be integrated with LIMS and equipment in high-performance automated laboratories or be used as a stand-alone application in manual laboratories, including mobile laboratories and infirmaries, and, in extra-laboratory sample pooling. For automated laboratories, LOMT generates mixing protocols for liquid handling robotics and reads testing results from machines. For manual laboratories, LOMT provides lab personnel with a friendly user interface for all steps of the process and a visual pipetting guide for mixing pools. When used stand-alone, LOMT also provides basic LIMS functionality for planning batches, tracking samples, pools, and assays, and bar-coding samples and assays. LOMT is a cloud application with a user interface that runs in a web browser on any desktop computer, laptop, tablet, or even smartphone. It allows any laboratory to start using advanced pool testing with stand-alone LOMT in a few days or 2-6 weeks when integrating LOMT with lab equipment and LIMS.



Differentiators

- Increasing laboratory capacity by up to 30 times
- Compatible with PCR, LAMP and other techniques of qualitative analysis
- Workflow management with friendly user interface reduces risk of human error.

Solution available in [AWS Marketplace]