

## Genohm case study



Digitizing laboratory operations for next-generation sequencing (NGS), biobanks, diagnostics and research with the SLIMS web application - a combined Laboratory Information Management System (LIMS) and Electronic Lab Notebook (ELN) platform - built with Smart GWT.

*“With Isomorphic’s Smart GWT, our developers are hyper-productive: It takes care of everything on both the client and server side, with its very complete GUI component toolkit, data binding systems and intelligent data management.”*

Frederik Decouttere, CEO, Genohm

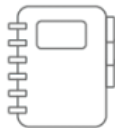
### Digitizing Modern Laboratories

Laboratory testing has come a long way in the last 20 years. Tests used to be simplistic, each spawning a single result which would be recorded - along with any relevant notes - using pen and paper. Today, modern technologies such as next-generation sequencing (NGS) can generate millions of results. Regulations dictate stringent tracking and traceability. Manual paper-based systems are obsolete. Lab Information Management Systems (LIMS) have helped meet laboratory’s requirements, but they lack functionality and flexibility, and - especially for smaller organizations - are cost prohibitive.

Genohm CEO, Frederik Decouttere, saw this as an opportunity. With a team of developers in Switzerland and Belgium, he set out to develop a more affordable LIMS + ELN web application to digitize modern lab operations. The Genohm ‘SLIMS’ application was launched in 2010, targeting smaller niche labs that could not justify the multi-million dollar investments required for existing LIMS solutions.



Biobanks



Research



NGS



Diagnostics

Since then, SLIMS’ power and flexibility has proven to meet the needs of not only small, but also large labs around the globe performing research, Biobanking, NGS, diagnostics, and digital pathology. Genohm’s client list is very impressive, and even boasts the United States FDA.

### Challenge

- Excel-like capabilities via plugin-free browsers
- Access application from any browser
- Flexible, feature rich UI (adv. filtering, workflow, dashboards, export/import, and more)
- Handle high volume data at speed

### Solution

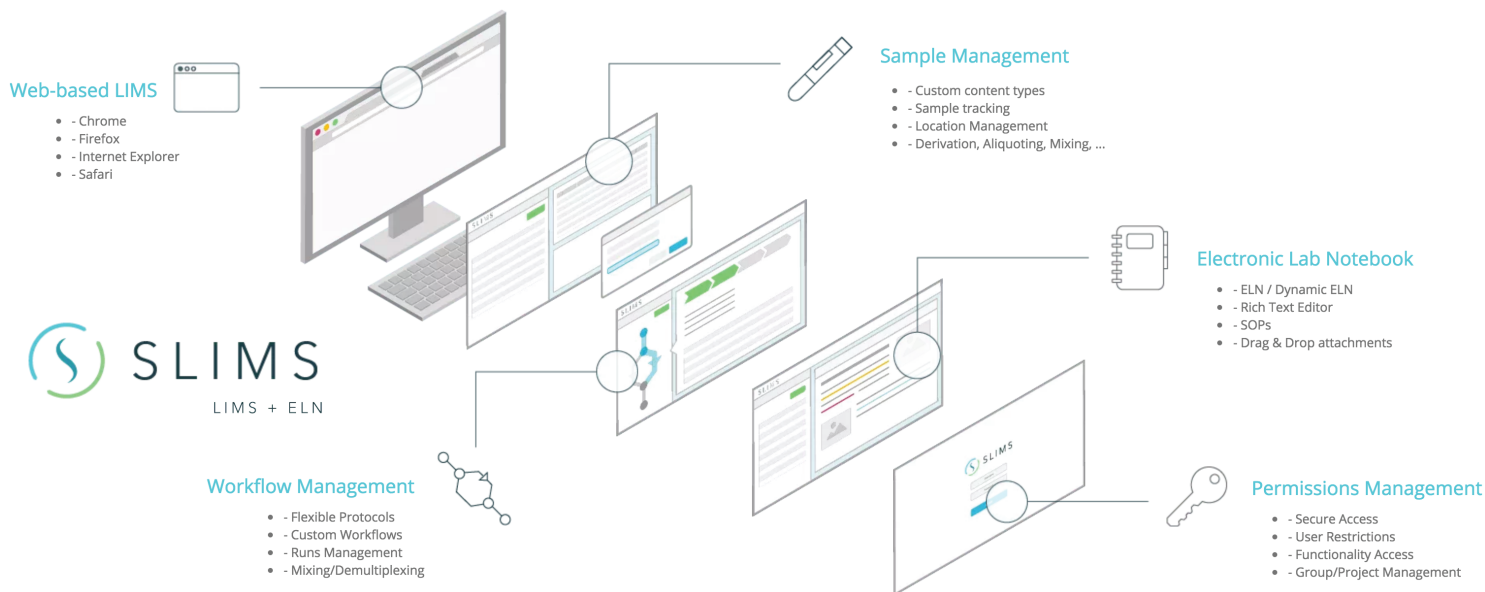
- Developed with Smart GWT Enterprise Edition
- Leveraged UI components, server side capabilities and Real Time Messaging Module
- Dashboards currently being developed using Smart GWT chart and graphs components

### Why Smart GWT?

- Architecture designed for high performance
- Very complete GUI toolkit
- Intelligent data management
- Elegant viewport implementation
- Advanced grid capabilities
- Excel export and import

### Results

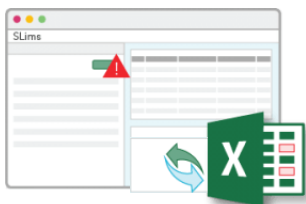
- Hyper-productive developers
- Competition killer: Startup to top 5 global player
- Easily manage millions of results from each lab test
- High-productivity user interface loved by users, available on any browser, plugin-free
- Flexible, customizable web application



## Wooing Scientists with Advanced Capabilities

Since SLIMS combines LIMS + ELN features, it already has a head start over the competition. The interface is also extremely flexible, allowing Standard Operating Procedures (SOPs) and Protocols to be easily defined and versioned by users.

SLIMS users have scientific backgrounds and range from Lab Technicians to Doctors and Professors. They love the productivity of MS-Excel. Successful adoption of the application dictated equivalent Excel capabilities and more. Smart GWT grid components provided all this as standard, including the ability to filter, group, sort, freeze columns, add formula columns, and edit data inline. Bonus features like drag and drop and automatic data highlighting set SLIMS apart. Smart GWT's Excel import and export ensures easy access to data in SLIMS. Concerns around data quality quickly dissipate as import checks for data errors, allowing them to be rejected outright, or flagged for resolution.



Modern laboratories generate huge volumes of data, and a sluggish application would just be a drain on productivity. The way SLIMS handles data makes for a snappy and responsive user experience. For example, the partial loading of datasets and adaptive filtering provided by Smart GWT mean data is retrieved in the most efficient way possible and unnecessary server trips are avoided.

Due to typical usage patterns, data volume, and potential patient privacy issues in some institutions, SLIMS was developed with the desktop in mind. However, thanks to the SmartClient platform, SLIMS works on any tablet or smartphone - without any additional development effort - allowing users to not be tied to their desks all day.

## Making Everyone's Life Better

SLIMS is not just making scientists' lives easier. Thanks to their use of Isomorphic's Smart GWT, Genohm Engineers are hyper-productive. Achieving an incredibly powerful interface that performs - even with huge amounts of data - has been so much faster and simpler than imagined. Things like pagination and intelligent data management are all taken care of. There is also no need for javascript workarounds for cross browser compatibility issues.



IT Administrators deploying SLIMS don't have the soul destroying task of installing plugins onto thousands of computers. Smart GWT components mean the power of SLIMS can be experienced through any standard web browser. And, with newly released SLIMS 6.0, cloud deployment is available, making rollout, security, maintenance and scalability considerations a thing of the past.



Lastly, thanks to medical advances realized from laboratories around the world supported by SLIMS, we'll all be living longer, healthier lives.



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