

Case study: Implementing SLims in a leading Swiss Institute of Technology, active in fundamental, applied and translational research in Life Sciences

SLims Added Value

- *SLims is a global solution for EPFL*
Large academic structures look for global solutions that can be implemented throughout all their sections. SLims requires only one central installation and then can be deployed as a shared platform to foster integration and collaborations. It also provides a single data source for statistics on LIMS and ELN usage.
- *SLims is one solution fitting many different laboratories*
The adaptability of SLims' LIMS + ELN features make it an added value for a large institute with a number of different laboratories, technologies and machines. It's a platform that is configurable for each and by each lab. By relying on SLims, EPFL has chosen a solution that simplifies their digital data management at the level of EPFL as well as at the level of every single lab.
- *SLims facilitates the management of Big Data*
SLims is ready to integrate data from different sources and flexible enough to collect big data easily. Labs can manage the integration of data analysis with different scripts to generate images and statistics. Other labs working with NGS fully profit from its adaptability to configure all the reagents and parameters specific to their workflows. SLimsGate Flows allows for automatic processing resulting in a time and workload reduction. It also enables full chain of custody for every process.
- *SLims makes sample management easier*
Laboratories of the School of Life Sciences deal with a variety of samples coming from different sources, including a number of different animal models. SLims provides an easy method to label, locate, and track the samples, linking them to protocols and results. The platform can also integrate with other software for the management of animals stocks.
- *SLims' ELN links samples to protocols to data*
SLims integrates an Electronic Lab Notebook with Sample and Data management. Researchers can organize, register and share their projects, experiments, lab protocols and activity in a web platform by projects and experiments. It is straightforward to link data, samples and SOPs. Scientists can use the freedom offered by the built-in Word-like text editor or store the original SOPs in files of any format they need (Excel, pdf, word...). SLims enables the project manager to access the work progress, either live or with the help of customized reports.
- *The EPFL Service facilities manage their daily routine with SLims*
EPFL also uses SLims to manage its Core facilities which serve its Life Sciences laboratories as well as external labs. The SLims platform tracks the production of solutions, sterilization and waste management. Its excellent label printing feature identifies the many and diverse items treated in the facility and retrieves all information about the processing of glassware sterilization, solution production or waste disposal. Finally, SLims helps the service to be compliant with GLP (Good Laboratory Practices).

Background

The Ecole Polytechnique Fédérale de Lausanne (EPFL) is one of the only two Swiss High Schools of Technology and is located at the shores of Lake Geneva. EPFL's School of Life Science is involved in very diverse research fields such as Neuroscience, Bioengineering, Cancer and Global Health.

For example, the Brain and Mind Institute with the "Blue Brain" project whose goal is to build a biologically detailed, digital reconstruction of the human brain; the Swiss Institute for Experimental Cancer Research involved since more than 50 years with fundamental cancer research; and the Global Health Institute dealing with the understanding, diagnosis, prevention and treatment of infectious diseases.



Client Need

EPFL is among the top 50 Schools of Technology in the world. Highly talented scientists gather here from all over the world to perform cutting-edge research in a variety of technological fields. As they deal with different scientific fields on a daily basis, their laboratories' environment will be very diverse.

EPFL supports its scientific staff in many ways, creating the ideal environment to trigger breakthroughs in science and technology. This support also facilitates collaborations between scientists, and simplify data sharing and data archiving.

In order to maintain a high level of excellence, EPFL must rely on a performing digital platform to manage its life science data produced by its numerous laboratories.

As said before, these data are very different in nature and also come from very different labs. The LIMS + ELN features of the software must be able to support data coming from labs working on Neurodegenerative Diseases, Cell and Membrane Biology, Microbial Pathogenesis, Neural Microcircuitry or Nanostructures Geometries. Moreover, beside research samples and data, it must also be able to support routine-performing structures such as core facilities producing reagents, performing flow cytometry measurements, crystallizing substances or washing and sterilizing glassware or reagents.

SLims as an all-in-one solution

Genohm has developed SLims, a laboratory informatics software that integrates LIMS + ELN features. From the beginning of its development, EPFL has supported Genohm by choosing to make SLims available for all the Life Sciences researchers and staff of the centralized Core Facilities.

Because of its high flexibility, completeness and adaptability SLims is the right solution to manage data and streamline process management tasks of various projects in diverse research settings. It is customizable for every laboratory and at the same time assures total traceability and full chain of custody. The platform allows a set of options to grant or deny access to any set of data or protocols, based on the needs of each scientist.

EPFL scientists deal with radically different scientific questions and various diseases with a wide range of technologies and instruments. They can use animal models, cell cultures or other biological material. Consequently, the procedures that are used, the data that is gathered, as well as their interpretation are very distinct and specific to the different projects. Therefore, SLims has evolved to deal with workflow, project and data management of NGS platforms, biobanking-style duties, freezer management and animal models management.

SLims' LIMS + ELN features enable the EPFL Life Sciences laboratories to:

- Organize data files by projects, experiments, notes or samples with advance search and tags capabilities
- Manage samples and other content with barcodes
- Turn multiple legacy biological databases and product inventory to a simple database system highly adaptable
- Data sharing features with access rights and users permissions (internal and external)
- Centralize data in a common and secure storage system
- Customizable functions with API (Java or Python coding)
- Enable high level of traceability.

About Genohm

Genohm is a Swiss company with offices in Lausanne (Switzerland), Ghent (Belgium) and in Durham, NC (USA). The company has developed SLims, a laboratory software automation suite. SLims provides laboratories with one integrated LIMS + ELN environment that tracks data and samples from the original sample shipment down to the result from lab machines and in-silico analysis pipelines. It fully accommodates the needs of any research lab, NGS lab, service facility, Biobank or QC lab.

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Lab Companion for
your Research Lab”

