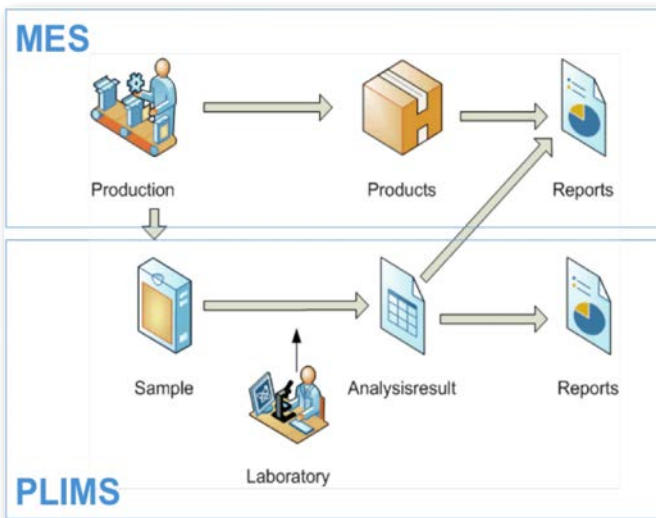


Apis Production LIMS



Production LIMS

Seamlessly integrate Material and Analysis data



Production LIMS

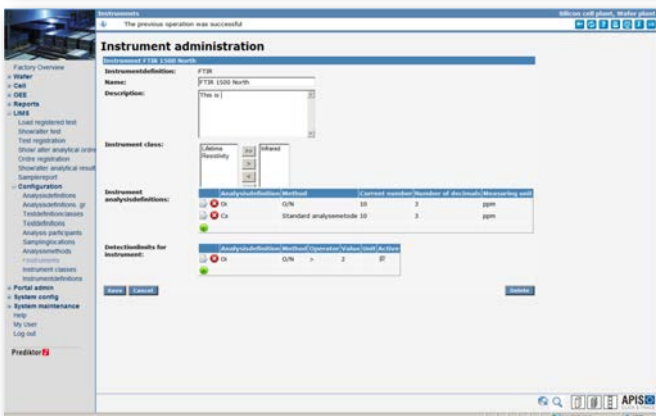
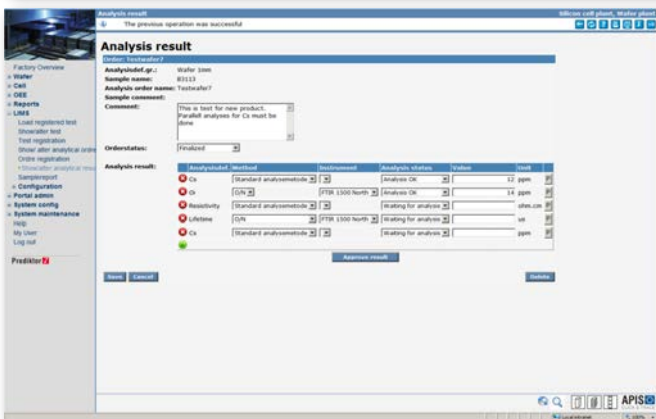
A production integrated Laboratory Information Management System (PLIMS) give you the benefit of easy exchange of analysis results and possibility to trigger events in manufacturing. Your APIS Click & Trace MES keeps track of material and process data, and the PLIMS module holds track of samples, analysis and results. By combining the two concepts, it is possible to connect the material data with analysis data, and vice versa. Actions in the PLIMS may influence on quality settings and product flow in the MES.

Lab reports may show results with analysis results linked to materials in manufacturing, and manufacturing reports may use the analysis data directly as properties to work in process. By modelling the process accordingly, product quarantine buffers may also be set up and controlled by the MES and PLIMS in cooperation.

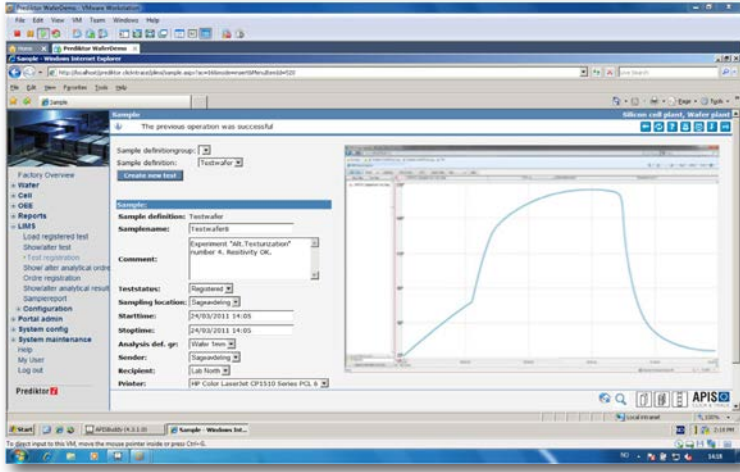
Main Features

The PLIMS module lets you define points in the process where samples can and should be extracted. In PLIMS, analysis orders are issued either manually or automatically with specification for what types of analysis to be done on a sample. Analysis can also be registered without orders as a special case. The system contains functionality to print labels or use other identification methods.

Possible analysis methods are defined once in the system, and describe the properties of the analysis like fat %, water %, resistance, temperature etc. to be measured. For each possible analysis, the proper instrument or analysis method is defined with their detection limits and accuracy. Instruments may also follow its individual qualification work flow.



All analysis results are registered in a web interface. Based on the APIS Hive integration platform, analysis results may also be gathered automatically or semi-automatically. This could be by SQL, OPC, file transfer, XML, SECS GEM etc. Automatic registrations may also be set up to require manual validation. If a MES is used together with the PLIMS, a sample can be set as a "collective sample" where the sample is a collection from several batches. The sample will then be connected to an unlimited number of materials. It is assumed that the results from this collective sample are representative for all batches.



Quality Registration and MES

Specifications for material quality classes and their analysis result limits may be registered in PLIMS. When the lab approves analysis results, the system will check the specification for the material and automatically give the batch, lot, pallet or container the assigned quality. At this point the quality rules of the MES takes over and decides the further flow for the product. This feature can be used to create product quarantines that temporarily stop processing of some materials awaiting lab results. Inhibit functionality on process equipment can be created to prevent operators to mix two batches with different material properties, or start machines with unauthorized materials installed.

Analysis Characteristic Rules

Several samples may be taken from the same product or batch, and the same analysis may be performed several times if needed, either for result stability or instrument issues. PLIMS uses the characteristic of the analysis order

to determine the value to use as valid:

- Replace: the latest result is used
- Parallel: all valid results are averaged
- Ignore: do not use as property of product, but the result may appear in some reports.

The main features of the procedure of choosing the valid result is described above, but there are also other possibilities with combinations of "Replace" and "Parallel".

Reports

The PLIMS contains standard reports for lab results, analysis results, listing of unacknowledged results etc., in addition MES reports may use analysis data in their reports. The data may be presented in graphs and tables, and can be exported to Excel or analyzed in SPC charts etc. Results may also be reported via OPC, SQL or other formats via the integration platform APIS Hive.

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