Success Story – Chemicals & Pharma

Design and commissioning of a conveyor system for pharmaceutical products

“Thanks to ControlBuild, our team brought the system on stream three months earlier!”

Project Manager

Context

The project team had to produce a complex system made up of a series of conveyers, used to transport pallets of finished and semi-finished products.

Each pallet represents a very high product cost. Delays or damages cannot be tolerated, since that would result in the project making a loss. Therefore, the upstream tests had to be complete enough to guarantee system startup without the slightest incident. The conveyor system is controlled by two PLCs.

Challenge

The project consists in designing and implementing a new conveyer system for pharmaceuticals in order to optimize the logistics chain. The challenge associated with this type of project consists in reducing equipment downtime as much as possible, to achieve high production efficiency.

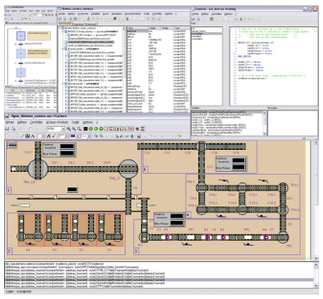

Figure 1: Simulation environment with ControlBuild

Solution

The team opted for ControlBuild Validation and the handling library delivered with the product, for simulation and validation of the system before it was commissioned.

Project development lasted 18 months. The first phase started with the formulation of the conveyor models required by the project. In a second assembly phase of the various components, a complete model of the system was built. This genuine virtual prototype was available to the project leader long before commissioning (see Figure 1). With ControlBuild, the team developed a single “conveyer” component and instantiated it a number of times, which meant significant time savings for the development team. Once the model was finished, the team entered the actual physical data of the project, at which point the simulation phase was started by executing a series of test procedures based on the operating data.

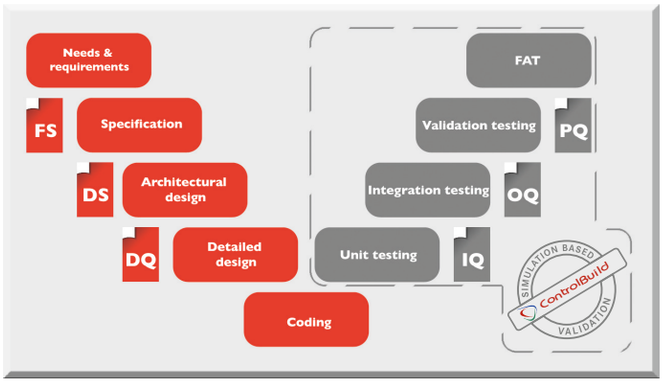

Figure 2: V-cycle of system development and qualification documentation. ControlBuild Validation is involved at the right-hand side of the cycle, significantly reducing test and validation times.

Context
Pharmaceutical production, packaging system, GAMP

Challenges
- Reduction of machine downtime
- Programmable Logic Controller (PLC) code
- System validation before production startup

Solution
ControlBuild is used for the validation and the commissioning of the PLC controllers before on site production (manufacturing and process systems).

Result
- Time savings
- Reduced costs
- Improved quality & reliability

Key Features
- Platform tests and acceptance (FAT) on simulator
- Acceptance solution and virtual production startup
- Automatic generation of GAMP-compatible documentation
- Automatic execution of tests (scenarios)
- Generation of test logs

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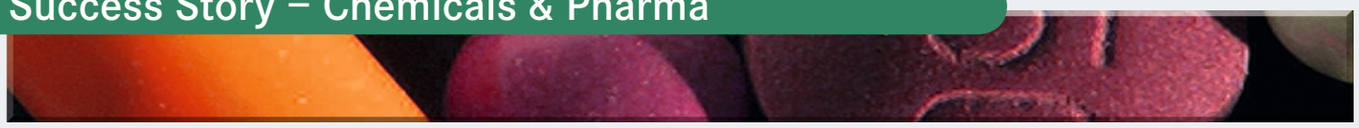
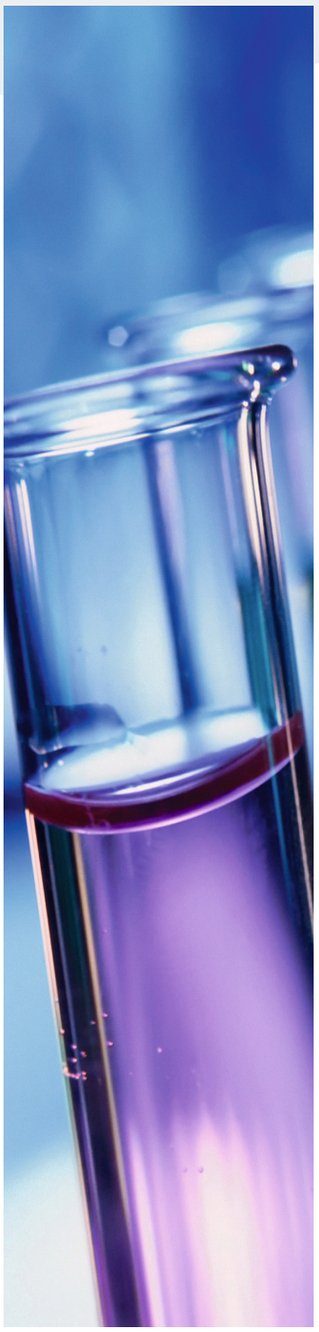


“ControlBuild is our baseline simulator for the test and validation phases for all our new systems.”

This method allows the programmable logic controller code to be debugged rapidly. ControlBuild executes the different scenarios and simulates all the transient parts of the conveyors: inputs/outputs, saturation flows. The entire system can be tested and validated before even being installed on site. The simulation system with ControlBuild (see Figure 1) also includes the GAMP approach to software qualification. Thanks to ControlBuild, the team gained three months on the system's production startup. With ControlBuild, it was right first time.

Results

- Time savings
- Management of reusable libraries
- Standardization of components
- Realistic simulation at each stage of the project
- Significant improvement in the quality and reliability of PLC programs
- Improvement of working conditions (less time on site)
- Reduction of risks associated with commissioning



Testimonial

“Thanks to ControlBuild, our team delivered the project three months early, simulated the whole operative part and rapidly implemented the system while increasing production quality. The integration tests conducted with ControlBuild Validation acted as support for qualification. ControlBuild is now our baseline simulator for the test and validation phases for all our new systems.” Project Manager

Customer references

Pharmaceutical laboratories:
Lilly, MSD-Chibret, Bristol-Myers Squibb, and others.

System integrators:
Ajilon, Cegelec, Clemessy, Spie and others.

About Geensoft

Geensoft develops and sells Engineering Tools and Services for Embedded & Critical Systems. It’s star products, Reqtify, AUTOSAR Builder, ControlBuild and RT-Builder are being deployed worldwide.

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