Field of application:
Emulation

Complex commissioning of logistics systems

When commissioning warehouse management systems, material flow control computers and subordinate control systems (PLC), problems often arise due to untested software and the associated difficult troubleshooting on the real system. Troubleshooting can lead to considerable time delays and deadline pressure. Realistic tests before the actual commissioning are hardly or not at all possible.

Operators, logistics planners and general contractors, who are responsible for commissioning, are confronted with this problem in almost every project.

With the help of emulation, the control software (PLC) can already be tested under almost real conditions before commissioning. In this way, possible problem areas can be detected and eliminated at an early stage.

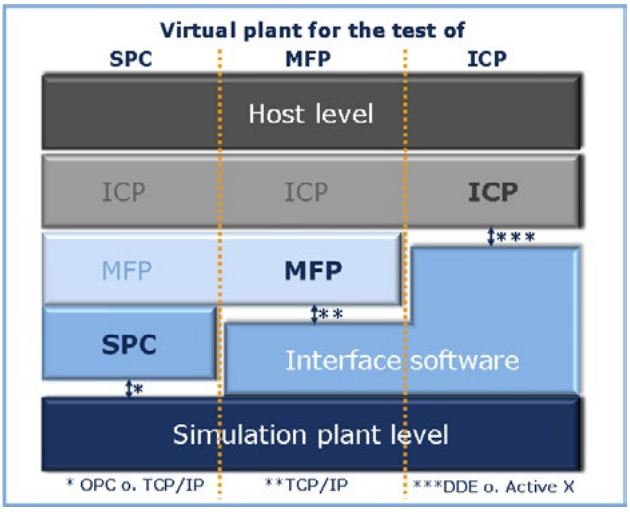
Virtual test of control software

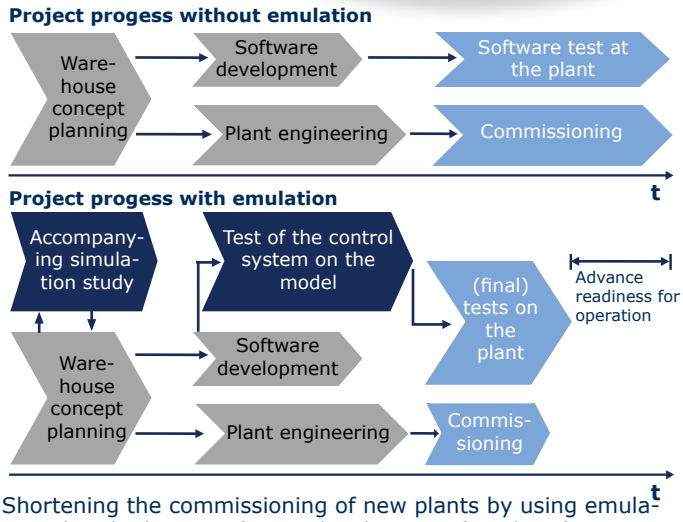
In order to drastically shorten the costly and often time-consuming introduction phase of the control software, a so-called online coupling can be realized. For this purpose, SimPlan has developed a technology that enables data exchange between the control software of the real plant and a corresponding simulation model. The model simulates the interaction of all resources.

In contrast to conventional test software, it is possible to view the behavior of the control software dynamically during an entire work period, e.g. a daily or weekly operation.

The technical implementation

Communication between the warehouse management computer, the material flow computer or the PLC and the simulation model takes place via interface software. This is able to process different protocol and telegram formats. Thus, it can be used flexibly. Examinations of the individual interfaces as well as completely continuous tests of all control levels are possible.





Shortening the commissioning of new plants by using emulation already during software development (LVR/MFR)

Since the tests happen independently of the real plant, it is possible to create situations within minutes and repeat them exactly.

The control software can be tested under extreme conditions, such as overload. The processes in the interaction between the control level and the physical level are thus optimized.

In addition, planned changes can be tested in this way parallel to ongoing operation without risk.

System configurations and communication for the different test levels

Goals and benefits

- Shortening of commissioning times
  - → low effort on site
  - → lower costs
  - → high customer satisfaction
- Comparison of different programming
- Investigation of failure scenarios:
  Simulation model generates test cases („stess test“)
  - → higher quality of the software
- Planning reliability
- Avoidance of costly software tests on the real plant:
  first test objects of communication (telegram traffic and database, routing instructions)

Fields of application

- Introduction of control software
- Updates of control software during operation
- Possibility to check software suppliers

References (Operator / Customer)

Audi, BMW, Ingram Micro / Viastore, Hermes Warehousing Solutions / Vanderlande, Beiersdorf / Dematic, Hella / Sitlog, Skylink Wien / Vanderlande, Kaufland / Vanderlande, Softcarrier / Unitechnik, Transpharm / Dematic, Zentis / Klug, E/D/E / Aldata, Stute / SSI Schäfer Noell

SimPlan AG was founded in 1992 as a service provider for the simulation of operational processes and today, with more than 120 employees, it is one of the leading German providers of simulation services.

Why SimPlan?

We are a cross-industry full-service provider for simulation, supporting companies of all industries with extensive expertise in the analysis and optimization of their business processes

- Objective and independent analysis
- Detailed knowledge in logistics and production from over 30 years of project work
  - → Development and use of standards
  - → Permanent advancement of simulation topics through research and development
- Excellent resources to respond quickly to your issues
- Close collaboration and project integration with a high level of on-site involvement
- Development of innovative solutions for the efficient handling of problems
- Neutral distributor for simulation software
  - → Support in software selection and implementation as well as training

Feel free to contact us

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