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7 tips

for a virtual commissioning with substance

How to secure the ramp-up and end crisis mode on the construction site

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Virtual commissioning

Why real commissioning- often failed

Changes are recognized too late.

- **Software, hardware, and processes are not coordinated.**
- **High pressure during ramp-up leads to errors.**

Troubleshooting on the gym floor is expensive and usually too late.

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Virtual commissioning

Emulation vs. Virtual Commissioning

The terms are often used synonymously.
Technically speaking, however, there is a difference.
Emulation is a technical component.
It primarily tests the control system against simulated plant behavior. The focus is on PLC logic and telegram exchange.
Virtual commissioning (VIBN) is the structured overall process.
It combines control, material flow, processes, scenarios and test organization in a consistent overall model.

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1. Early start beats late correction

Don't start VIBN just before setup.

The model and control system must be developed together from the outset. This is the only way to correct structural errors in logic, timing, or system design early on.

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2. Marrying logic and material flow

Simulation and PLCs belong together.

Don't just test movements, but also decision logic in the event of traffic jams, backups, or blocked sensors. Real processes instead of idealized images!

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3. Courage for a controlled crash

Deliberately simulate error conditions.

Downtime, malfunctions, and borderline cases happen in real life anyway. Use the model to specifically test borderline cases, exceptional situations, and operator errors. This will reveal whether the control logic reacts robustly.

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4. Separate the rolls cleanly.

Who tests what?

Unclear responsibilities are one of the most common causes of delays in commissioning.

Create clear interfaces between automation, IT, planning, and operations. Clearly defined responsibilities significantly accelerate testing cycles.

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5. Data realism instead of estimation

Use realistic parameters.

Cycles, setup times and sensor delays must correspond to reality. Even small deviations quickly add up to noticeable effects in operation.

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6. Training without risk

Use VIBN for training.

This increases safety, routine, and acceptance.

Involve operators and maintenance personnel early on. Test typical operating procedures, malfunctions, and restarts under realistic conditions.

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7. Do not build a disposable model

Continue using the model after Go-live.

Use the digital twin for future optimizations, retrofits or changes without jeopardizing ongoing production.

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Virtual commissioning

Virtual commissioning reduces risks when it is understood as part of the overall system.

It combines control, processes, organization and people in a test environment.

Where do your commissioning projects lose the most time today?

Contact us: info@simplan.de.

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