

VIRTUAL COMMISSIONING SOLUTION

A realistic and intelligent virtual environment for Control Engineers to debug and validate PLC Programs

Overview

What is Virtual Commissioning? Virtual Commissioning allows the debugging of the code on an actual Programmable Logic Controller (PLC) that will be on the shop floor, weeks or months before the integration of all the devices from tooling, robots, clamps, safety devices, electrical, hydraulics and pneumatics on the shop floor occur.

By building a virtual environment in DELMIA Virtual Commissioning solutions that is the exact reproduction of a production cell, a control engineer will be able to see this virtual cell come to life as it interacts with the PLC. DELMIA Virtual Commissioning solutions can save weeks in the debugging process by enabling the user to setup workcells with smart devices and link the logical behavior for those devices or machines in the workcell to validate them before commissioning on the shop floor.

Building an intelligent virtual environment. DELMIA Virtual Commissioning solutions offers easy-to-use smart device building tools, to quickly prepare the digital Environment for Virtual Commissioning. It enables the engineer to build and validate a library of mechatronic smart devices and to capitalize Virtual Commissioning knowledge for better productivity.

Once the digital environment is established, engineers can reuse Smart Devices to allow any company to build a library of smart

devices that describes the behavior of a device and continues to use that device “as is” on future projects. This means less time spent in building the virtual environment while simultaneously using pre-validated components.

Test, Validate, and debug your system before physical commissioning. DELMIA Virtual Commissioning solutions allow the control engineer to leverage the virtual model of the machine or cell to explore different “what if?” scenarios that are otherwise very difficult to validate. What if one robot is running slow? What happens when the line transitions from product A to product B? How will the system react to an operator hitting the emergency stop, and how the machine will start again after the emergency stop to resume full production rate? -- Weeks before integration of all components and systems occur, the control engineer can test all fault conditions, saving costly down time once the system is in production.

In addition to testing and debugging the PLC code, DELMIA Virtual Commissioning solutions allows the engineer to perform a virtual integration of all devices and check the engineering in the different disciplines. Are the hydraulic, pneumatic and electrical systems complete and properly defined? During Virtual Commissioning, errors such as a device not being grounded in the schematics can be identified and corrected.



Questions to ask Yourself to Address Your Manufacturing Challenges

Do you always meet your ramp-up to line rate schedules on new production systems?

Would it be helpful to test your production system fully loaded, with line empty, with line partially down, etc. prior to integration?

Are your delays in the schedule due to the first build?

Are your delays in the schedule due to tear down and shipping?

Are your delays in the schedule set-up time and re-debug on the shop floor?

Would it be helpful for the control systems to be validated and work when they are integrated on the shop floor?

Do you have delays in the schedule of new production systems in engineering?

Would it be helpful to have all the engineering (electrical schematics, pneumatics, hydraulic, PLC programs, HMI programs diagnostics) correct and tested BEFORE integration?

What is the time and cost involved in training line operators?

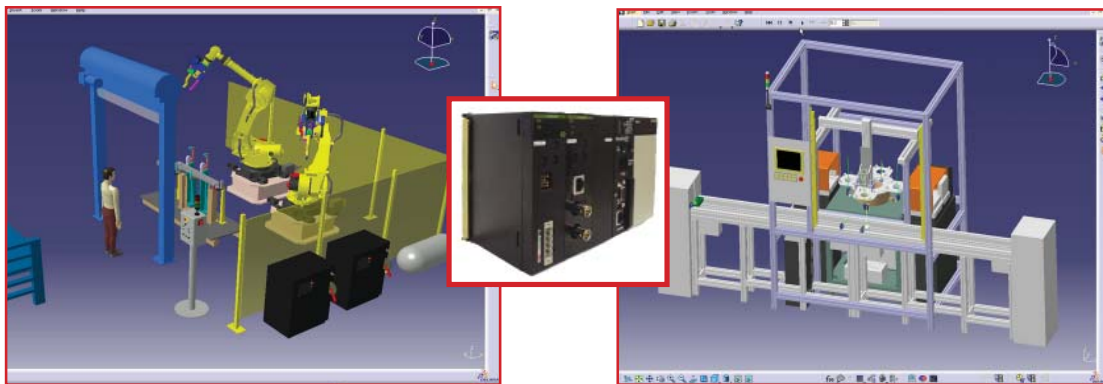
What is the answer to your challenges? DELMIA Virtual Commissioning solutions!

Key Functionality

- Validate all diagnostic codes without being on the shop floor
- Visualize and validate the process, driven by the PLC code prior to integration
- Validate as many “what if?” scenarios as needed and fully debug controls
- Test production and failure conditions
- Build and validate a library of mechatronic smart devices
- Train operators to handle all of the “what if?” scenarios

Benefits

- Work with any PLC on the market such as Schneider, & Omron, Rockwell Automation
- Ease-of-use allows a wider range and adoption of the technology
- Helps achieve a significant reduction in risk and start-up time
- Provides virtual production training with simulation
- Review safety aspects in a virtual 3D environment
- Reduce cost of ramp-up support during commissioning



Effectively commission your PLC code in a 3D virtual environment.

See your virtual cell come to life as it interacts with actual PLC hardware, saving valuable engineering time debugging and validating your PLC code.

For more information on DELMIA, visit our website at www.delmia.com

About Dassault Systèmes:

As a world leader in 3D and Product Lifecycle Management (PLM) solutions, Dassault Systèmes brings value to more than 100,000 customers in 80 countries. A pioneer in the 3D software market since 1981, Dassault Systèmes develops and markets PLM application software and services that support industrial processes and provide a 3D vision of the entire lifecycle of products from conception to maintenance to recycling. The Dassault Systèmes portfolio consists of CATIA for designing the virtual product - SolidWorks for 3D mechanical design - DELMIA for virtual production - SIMULIA for virtual testing - ENOVIA for global collaborative lifecycle management, and 3DVIA for online 3D lifelike experiences. Dassault Systèmes is listed on the Nasdaq (DASTY) and Euronext Paris (#13065, DSY.PA) stock exchanges. For more information, visit <http://www.3ds.com>

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