AUTOMATED ENGINEERING

Focusing on **innovations and greater efficiency**

Rapid technological progress and increasingly complex products require new engineering approaches to ensure competitiveness in machine building. Automated engineering is a highly promising answer to this challenge. It not only shortens development time, it also minimizes errors in the engineering process and gives the development team more time for creative tasks.

SIEMENS

Drastically reduce engineering time

Engineering teams are being confronted with increasingly complex products that have to be launched in an ever-shorter time. Traditional manual methods are often stretched to their limits, because they're more susceptible to errors. This is where automated engineering comes in.

Steps for automating the engineering process

1. Automate repetitive tasks
2. Generate PLC code
3. Generate visualization
4. Module-based generation
5. Efficiently configure energy data acquisition

You can start by automating repetitive tasks, and then depending on your preferences, scale up to a fully automated development process.

"In engineering, I need to focus on the essentials and not on the everyday tasks."

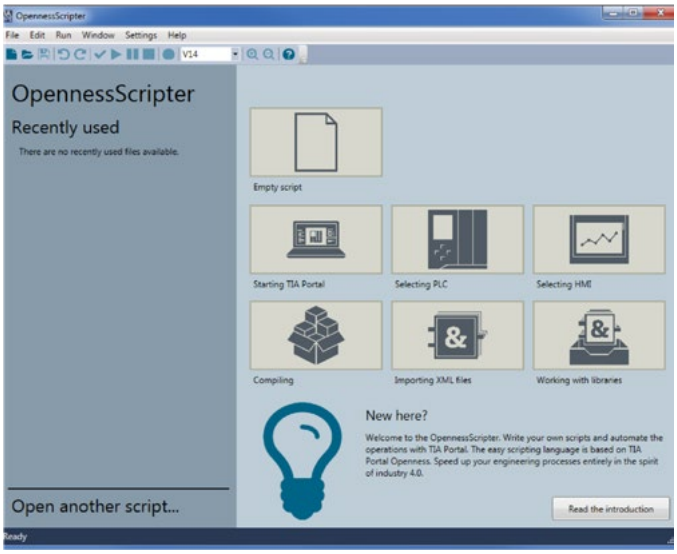
Stefan Henzmann

Project Manager, Actemium Schweiz AG

Automated engineering significantly shortens your development time by reducing potential errors during the design phase. TIA Portal can be used to easily and automatically generate SPS code, HMI visualizations, and modules for complex motion solutions.

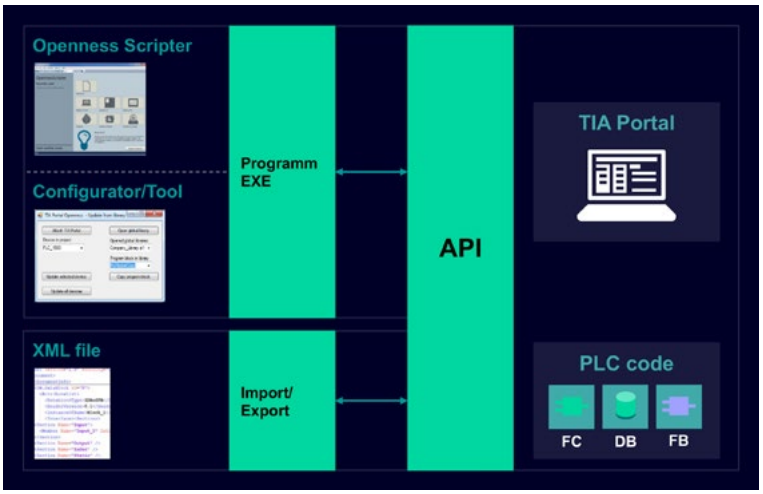
How to automate repetitive tasks

The first step toward boosting efficiency is to automate repetitive tasks, and our TIA Portal offers you a central development environment. Thanks to the Openness interface, the functions in this environment are controlled by applications that are already integrated or that you develop yourself. The TIA Openness Scripter is a user-friendly script language for TIA Portal. The basics can be easily automated using predefined Openness functionalities and intuitive script commands.

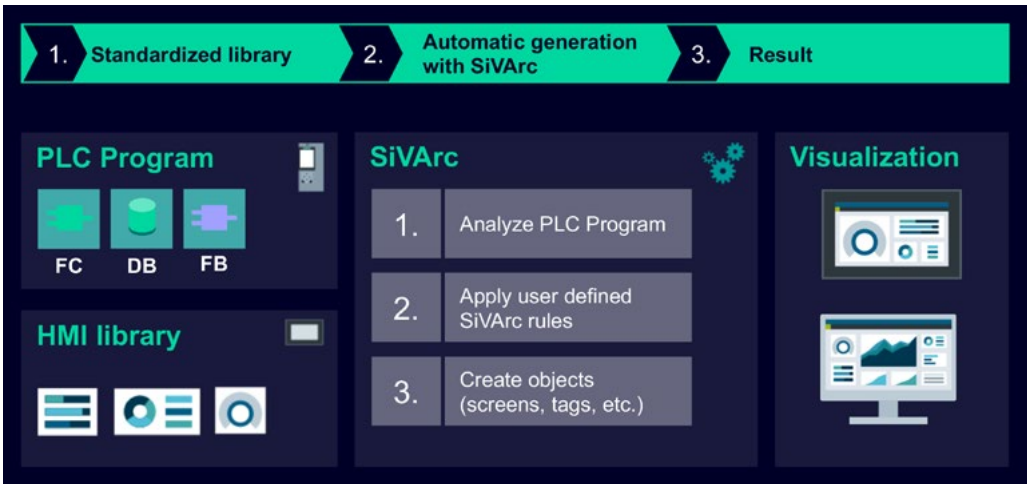


How to generate PLC code

An important step in the engineering process is generating the PLC code. With the TIA Portal API, this process is automated. You can automatically generate components thanks to tools like Openness Scripter, Configurator/Tool, and XML files. Using the API interface in WinCC and STEP 7 in TIA Portal, you can integrate TIA Portal in your development environment to automate your engineering tasks. You can also use external development environments to write your own applications: for example, a code generator for HMI images and PLC modules.

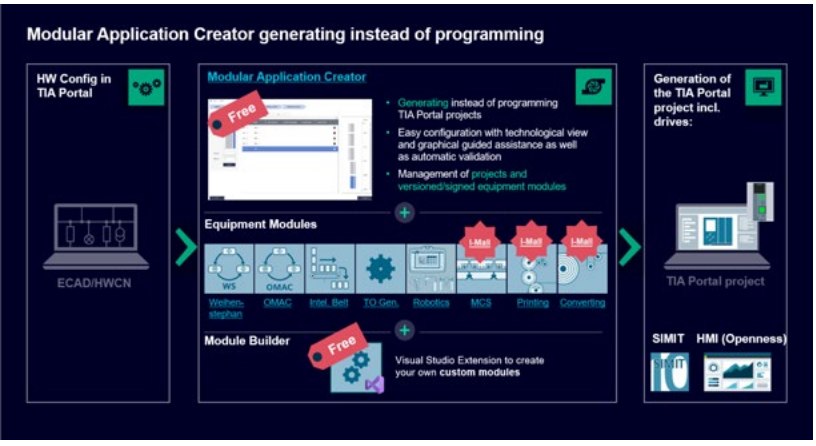


How to generate a visualization



Do you need to visualize user interfaces uniformly throughout the plant? And do you also have to substantially reduce your engineering effort? You can achieve these goals by generating visualizations automatically. In this case, the controller's program code and visualization objects are used within the framework of system-wide library concepts. Complex HMI projects can also be created automatically using tools like SIMATIC SiVArc. User-defined rules from the SPS program are used to create objects and make the entire process more efficient.

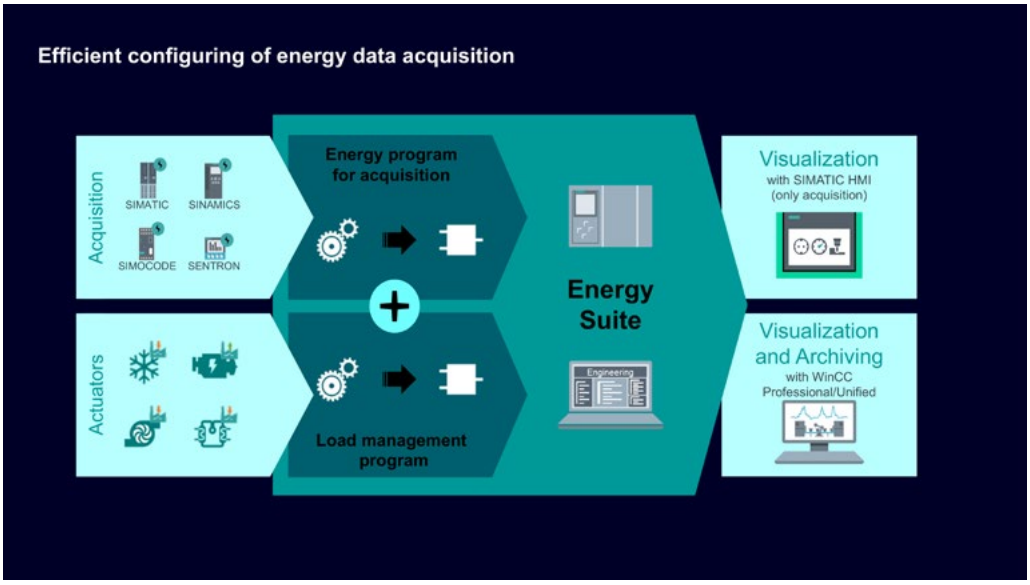
Module-based generation



For complex motion applications, the Modular Application Creator comes into play. This tool automatically generates machine projects using predefined Equipment Modules. This requires a hardware configuration for the foundation: for example, an existing TIA project or an electrical design from an eCAD system like Eplan, which is imported in the Modular Application Creator. The Equipment Modules contain the industry- or topic-specific logic to generate the program. There are already several predefined Equipment Modules you can use, and you can also develop your own user-specific modules. With this stored logic, the libraries, and the source project, you can generate the finished TIA Portal project with a pre-designed basic structure at the press of a button. These modules make it much easier to develop complex applications and reduce potential errors during engineering. It's also possible to generate the first elements for drive configuration, simulation, and visualization.

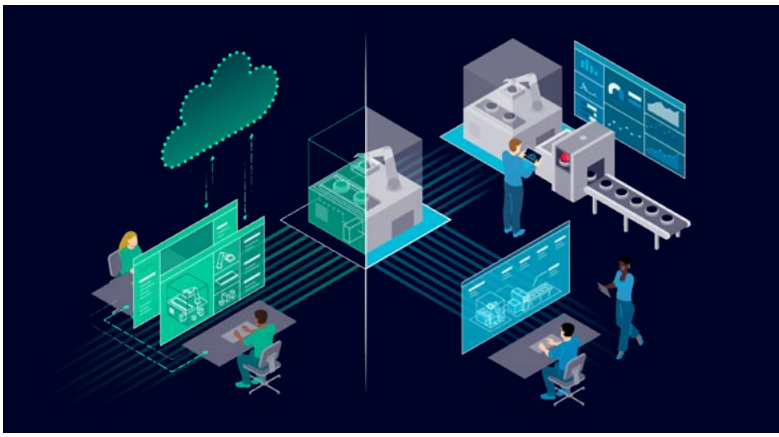
How to configure efficient energy data acquisition

An efficient configuration for energy data acquisition is another area where automated engineering excels. With Simatic Energy Suite as an option package for TIA Portal, you can easily configure measuring points for acquiring energy consumption data and expand them as needed.



TIA Portal: More than an engineering framework

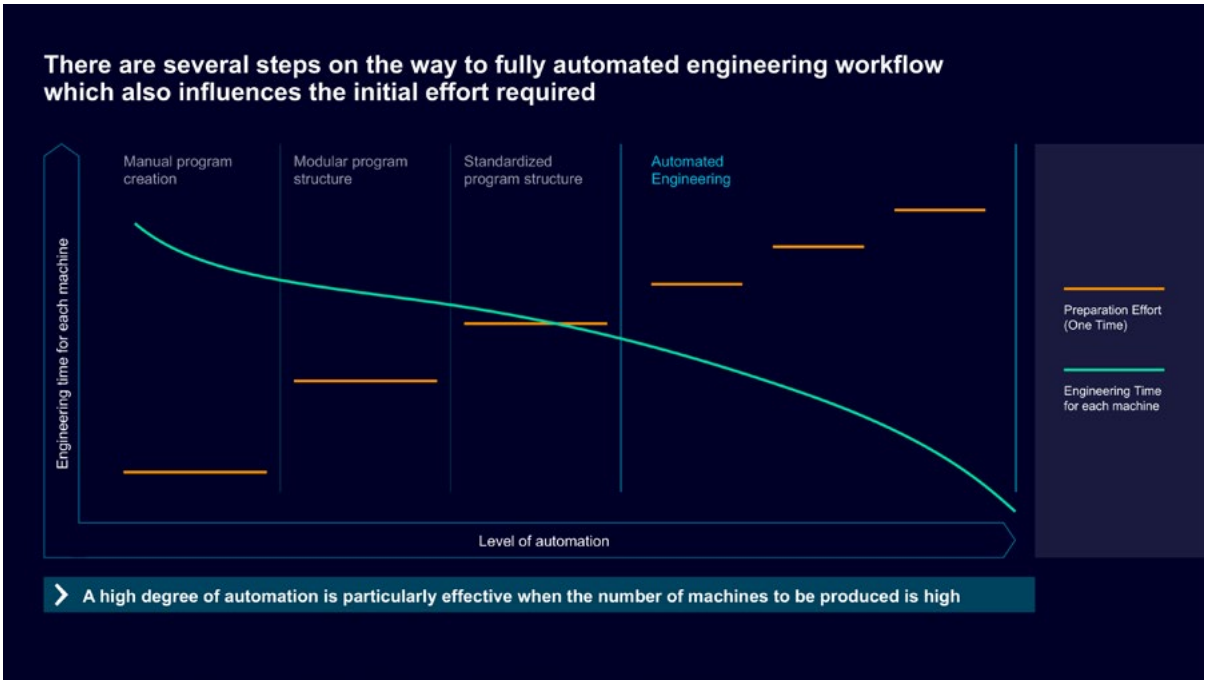
Faster, more flexible, and more productive: Innovative simulation tools, seamlessly integrated engineering, and transparent plant operation work perfectly together in TIA Portal. The new options benefit system integrators, machine builders, and plant operators, making TIA Portal your perfect gateway to automation in the Digital Enterprise.



Summary
The future of engineering

Automated engineering fundamentally changes the way that products are developed. It not only significantly shortens development time, it also facilitates innovation and enhances the quality of the products developed. Companies that successfully implement this technology can boost their competitiveness and also engage their highly motivated engineers in creative tasks.

A high degree of automation is increasingly effective the larger the number of machines to be produced.



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