

# How can I manage all automation software tasks in one engineering environment?



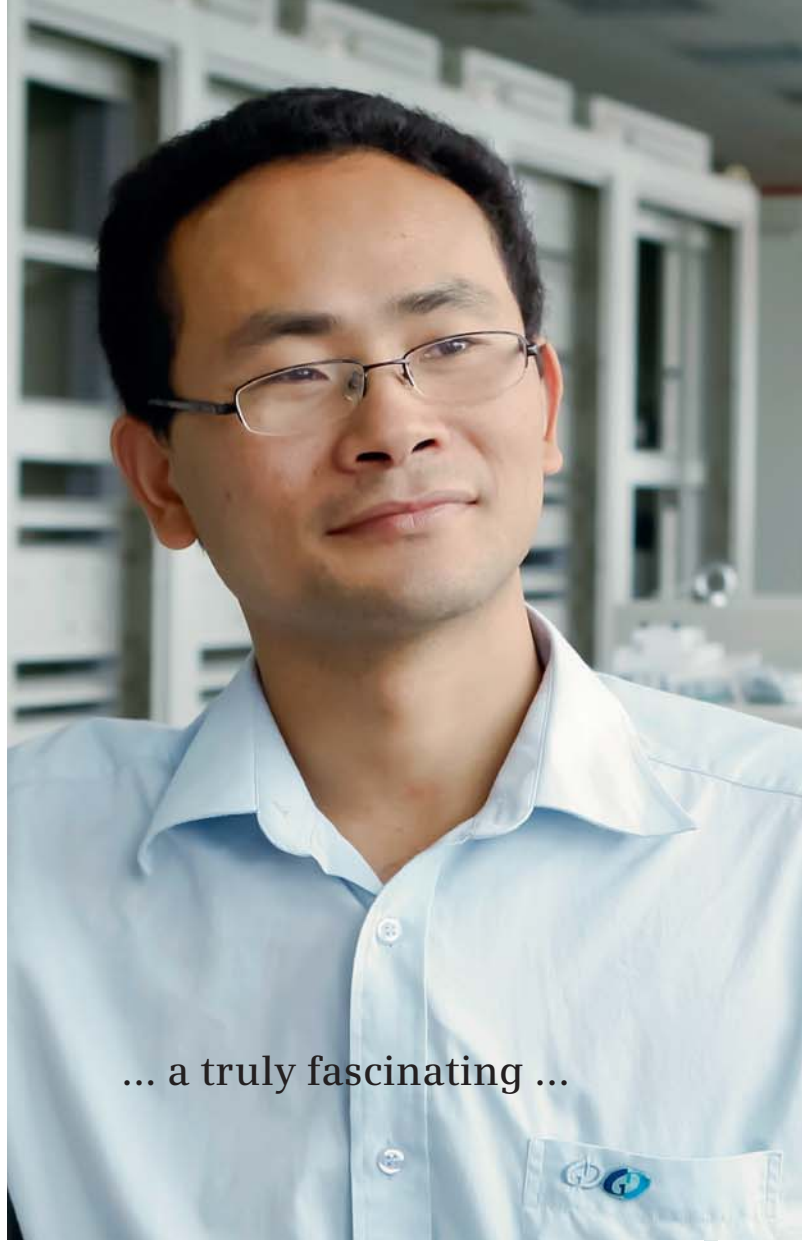
With Totally Integrated Automation Portal: One integrated engineering framework for all your automation tasks.

Answers for industry.

**SIEMENS**



Totally Integrated Automation Portal is ...

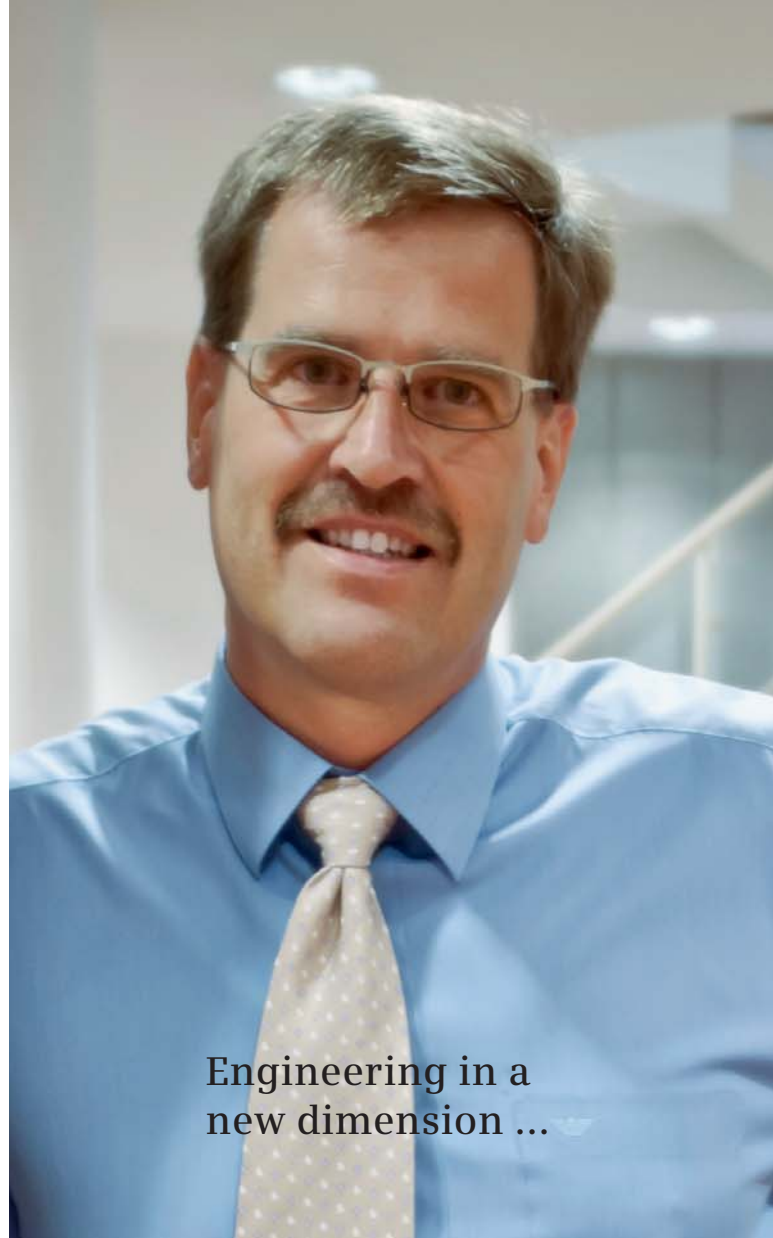


... a truly fascinating ...





... new engineering framework  
for all automation tasks.



Engineering in a  
new dimension ...

## Intuitive. Efficient. Proven. Engineering redefined.

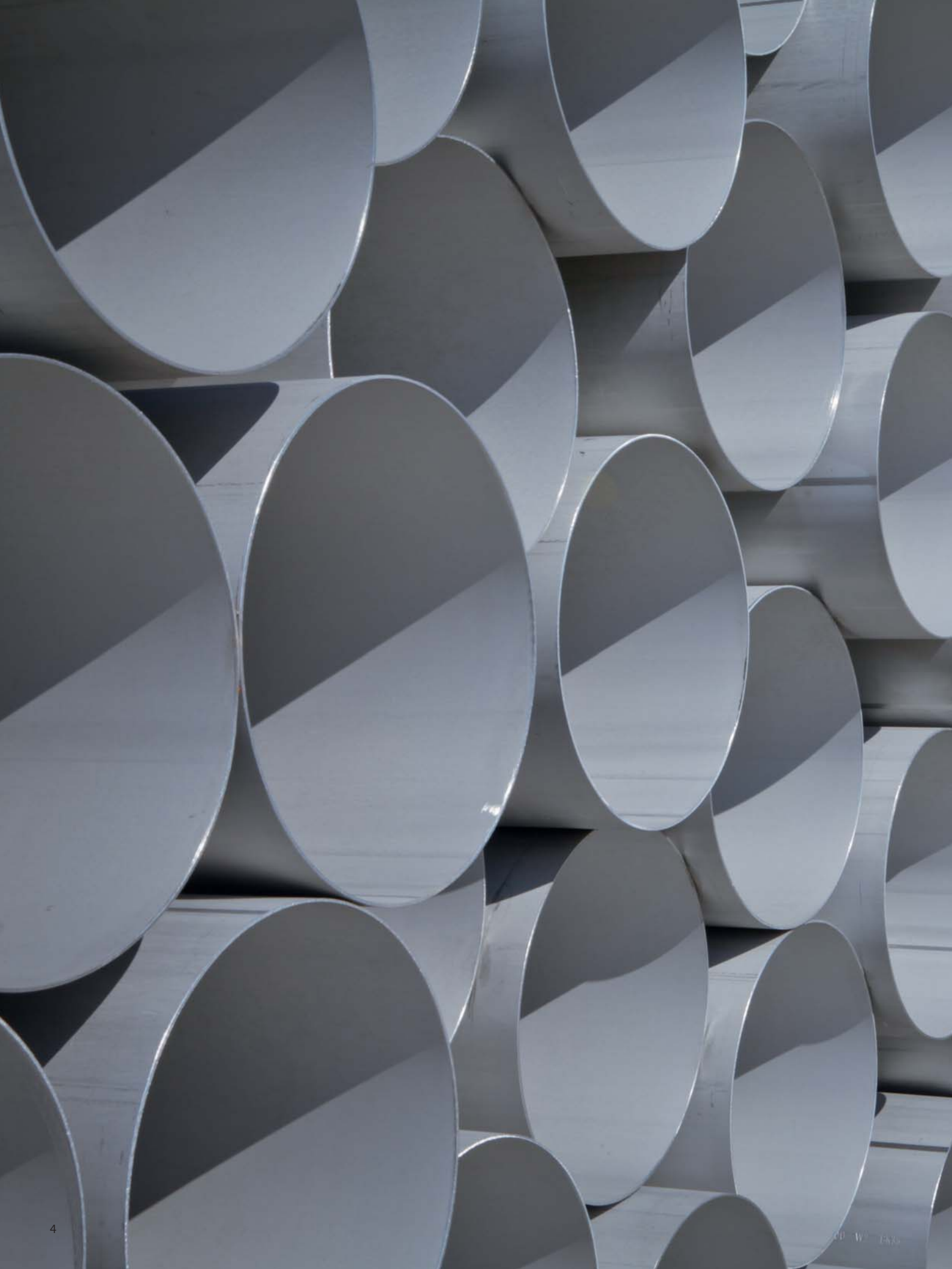
Engineering solves problems and opens up new possibilities. It makes processes more efficient, faster, and reduces manufacturing cost. From sophisticated machinery to medical devices and renewable energy technologies, engineering makes our modern life possible.

Today, engineering is inseparable from its design software. As a leader in the development of engineering software tools, Siemens recognizes the significance of intuitive, efficient and proven engineering software to enable our customers to stay competitive.

Siemens Totally Integrated Automation Portal (TIA Portal) is the next generation of engineering software for industrial automation. The industry's first automation software with "One Engineering Environment" – One Software Project for all automation tasks.

**It's engineering redefined.**

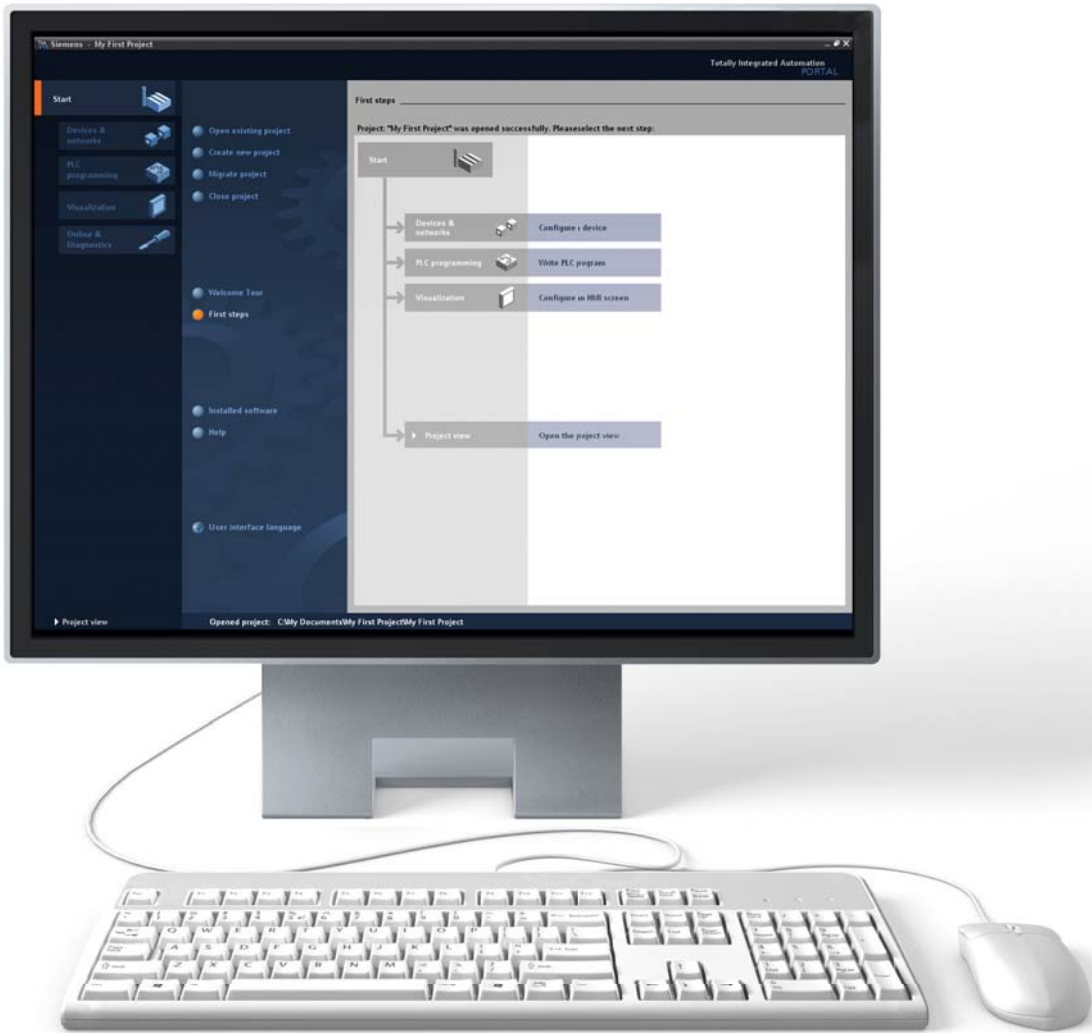






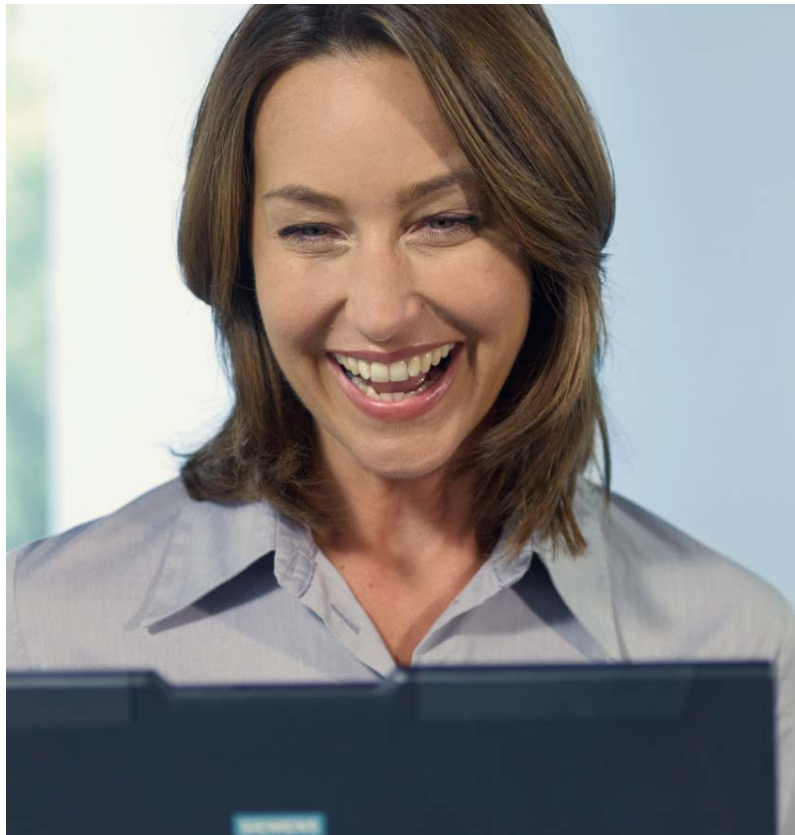
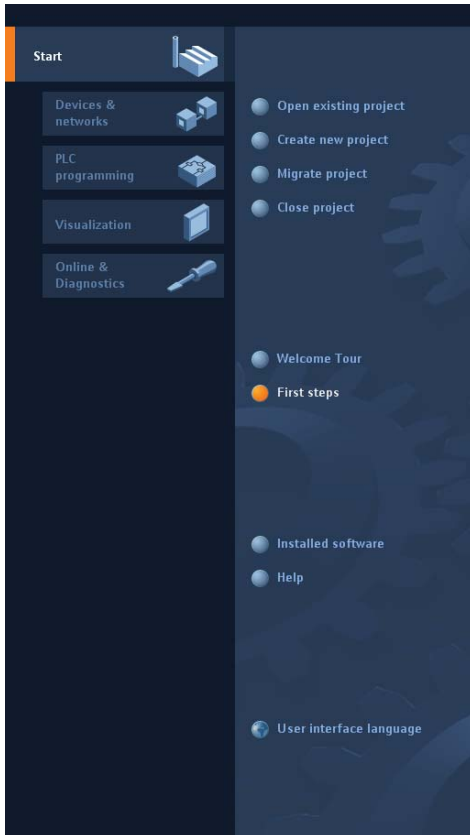
“In my opinion, the TIA Portal will change our everyday work by making a lot of things simply easier.”

Thomas Jansen  
Electrical Division  
BUTTING  
Germany



## Increase your competitive edge.

The trend continues: customer demands, market requirements, and increased productivity keep rising while overall costs must go down. This means any costs for engineering need maximum return on investment.



With Totally Integrated Automation (TIA), Siemens follows a vision of providing an integrated platform for implementing automation solutions – in all industries around the globe. TIA has been the core intelligence for more than 100,000 automation products for over 15 years. This system architecture is the foundation for open connectivity and maximum interoperability across multiple devices to transform them into a totally integrated automation system. This results in maximum productivity at all levels of your facility, from the field devices to controllers to corporate management, enabling you to react fast and meet even the most challenging demands. This system, when synchronized with customer requirements, optimizes factory, machine, and process operations allowing you to not only be more efficient, but increase your productivity and competitiveness.

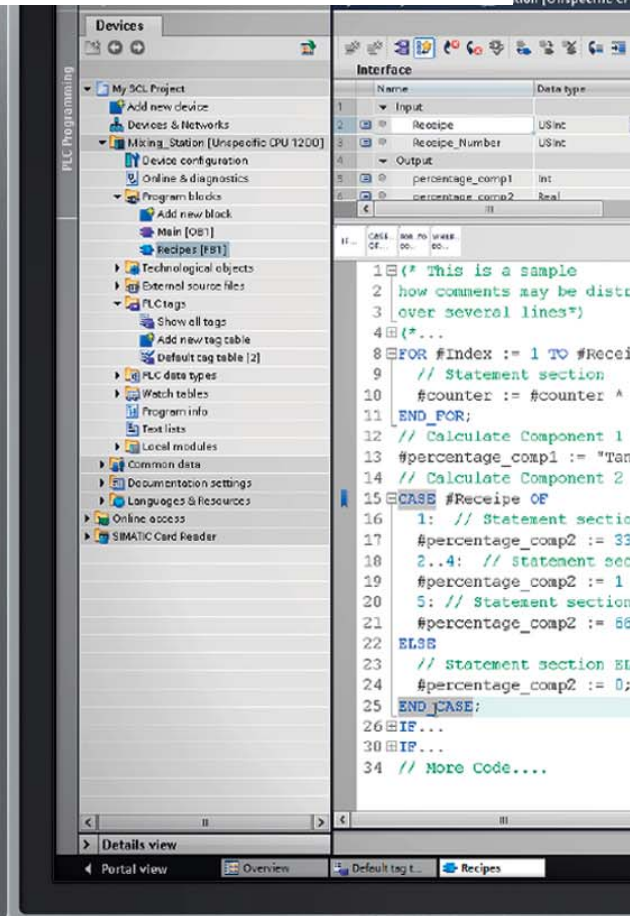
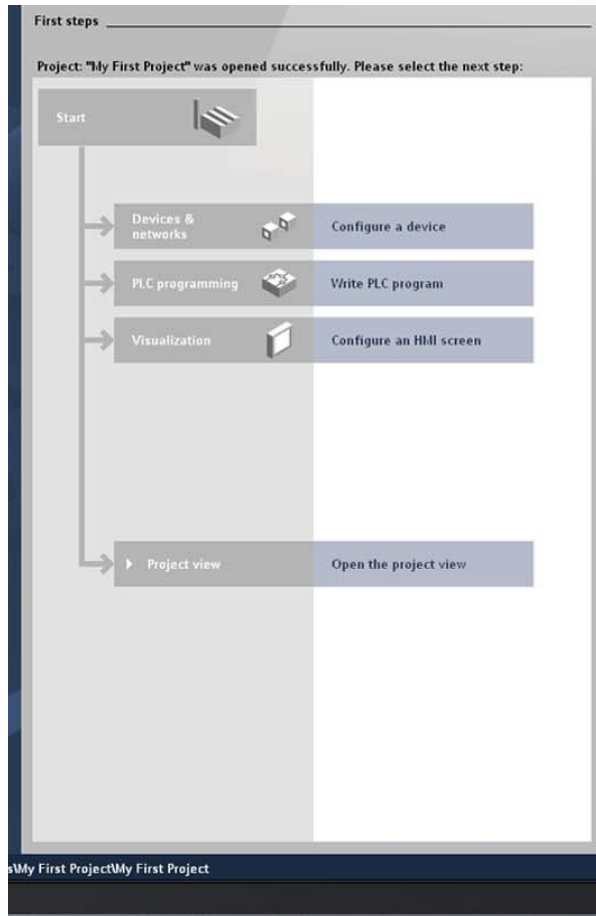
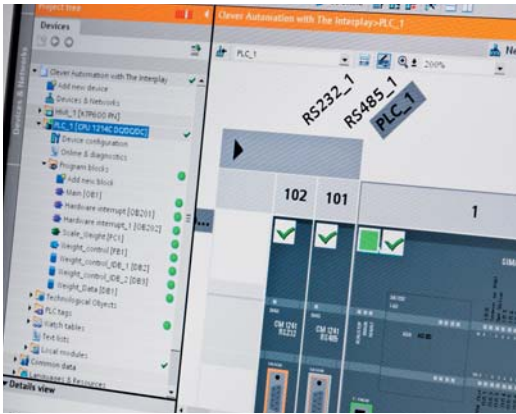
### **Totally Integrated Automation Portal – a true milestone**

The new engineering framework, TIA Portal, unifies all automation software tools within a single development environment. TIA Portal represents a milestone in software development with the industry's first automation software with "One Engineering Environment" – One Software Project for all automation tasks.

### **Intuitive, efficient, proven**

When it comes to realizing innovations, TIA Portal integrates every aspect with its intuitive user interface, efficient navigation and proven technology. From designing, installing, commissioning, maintaining and upgrading automation systems, TIA Portal saves engineering time, cost and effort.

# Intuitive



**The Portal View**  
guides users intuitively through every engineering step

**The Project View at a glance**  
gives direct access to all functionalities, editors and variables integrated within the engineering framework



# Intuitive engineering right from the start.

A user-defined concept, one common look and feel, with integrated intelligence, and total data management let you unfold the entire potential for both simple and complex applications.

## Task and user-oriented

TIA Portal provides state-of-the-art software technology wrapped in an intuitive user interface and allows you to concentrate on engineering without slowing down learning a new software. Its intuitive layout and navigation enables you to quickly recognize your desired programming and editing functions. Right from the beginning of every project, users may choose between a task-oriented portal view for simplified user guidance or a project view with fast access to all relevant tools. The portal view guides users intuitively through every engineering step. Whether a controller is being programmed, an HMI screen is being designed or network connections are being configured, TIA Portal intuitively helps new and experienced users alike navigate in the most productive manner.

## Common look and feel with integrated intelligence

Every software editor within TIA Portal is designed according to a common layout and navigation. Whether its hardware configuration, logic programming or HMI screen design, all environments share a similar editor design with the same time and cost saving intuitiveness.

Functions, properties and libraries are automatically displayed in accordance to their most intuitive view for each desired operation. Switching between editors is easier than imagined with “Intelligent Drag

and Drop”, “Autocompletion for tags” and many more advanced capabilities enabling engineering of an entire automation system not just a single device. The TIA Portal supports engineering tasks by integrating intelligence into the entire project – regardless of its complexity.

## Data consistency

TIA Portal makes tag database management a minimal time-consuming task. Tag declaration only needs to be entered once and instantly becomes available across all editors. Maximum data consistency and transparency throughout the complete project is the result, reducing errors and improving the quality of your automation project. The data consistency in the TIA Portal ensures easy access to any tag from any editor with updating capability across all connected devices.

## Framework architecture in an attractive design

TIA Portal is an advanced software architecture designed on a simple navigation scheme. The graphical ergonomics guarantees the highest software efficiency and timesaving. All editors are clearly arranged and available from a single screen. You always have a complete overview of the project without having to click through complicated menus and window structures. This means the entire software works as an easily accessible framework. This is what we call “unprecedented intuitiveness”.

# Efficient tools for instant success.

Engineering tasks in the world of automation systems can be both simple and highly complex. Programming powerful algorithms can often be time-consuming but repeating them should be simple and instantaneous. The ideal engineering software must be interoperable and results must be reusable to save time and ensure the highest project quality.

### **Highest interoperability**

When designing integrated automation systems, it is very common for engineers to be working in multiple editors at the same time. For the first time ever, all engineering tools can be accessed from a single graphical interface. With TIA Portal, we have developed a powerful graphical engineering framework, which acts as a single software with one common user interface. If configuring multiple devices, data can be transferred between different editors as easy as drag and drop. All resulting device connections are automatically generated in the background. This not only makes your work easier, it allows you to spend less time engineering the control system and frees valuable time for focusing on your core application.

### **Reuse of results**

With TIA Portal, you can combine different parts of engineering projects to form libraries that can be easily reused. This means that configurations from different machines and plants may be centrally stored on a server, managed, and archived in structured libraries. Previously engineered components, proven project data, as well as projects from past versions may easily be reused, allowing features and functionalities to be added or deleted. The initial

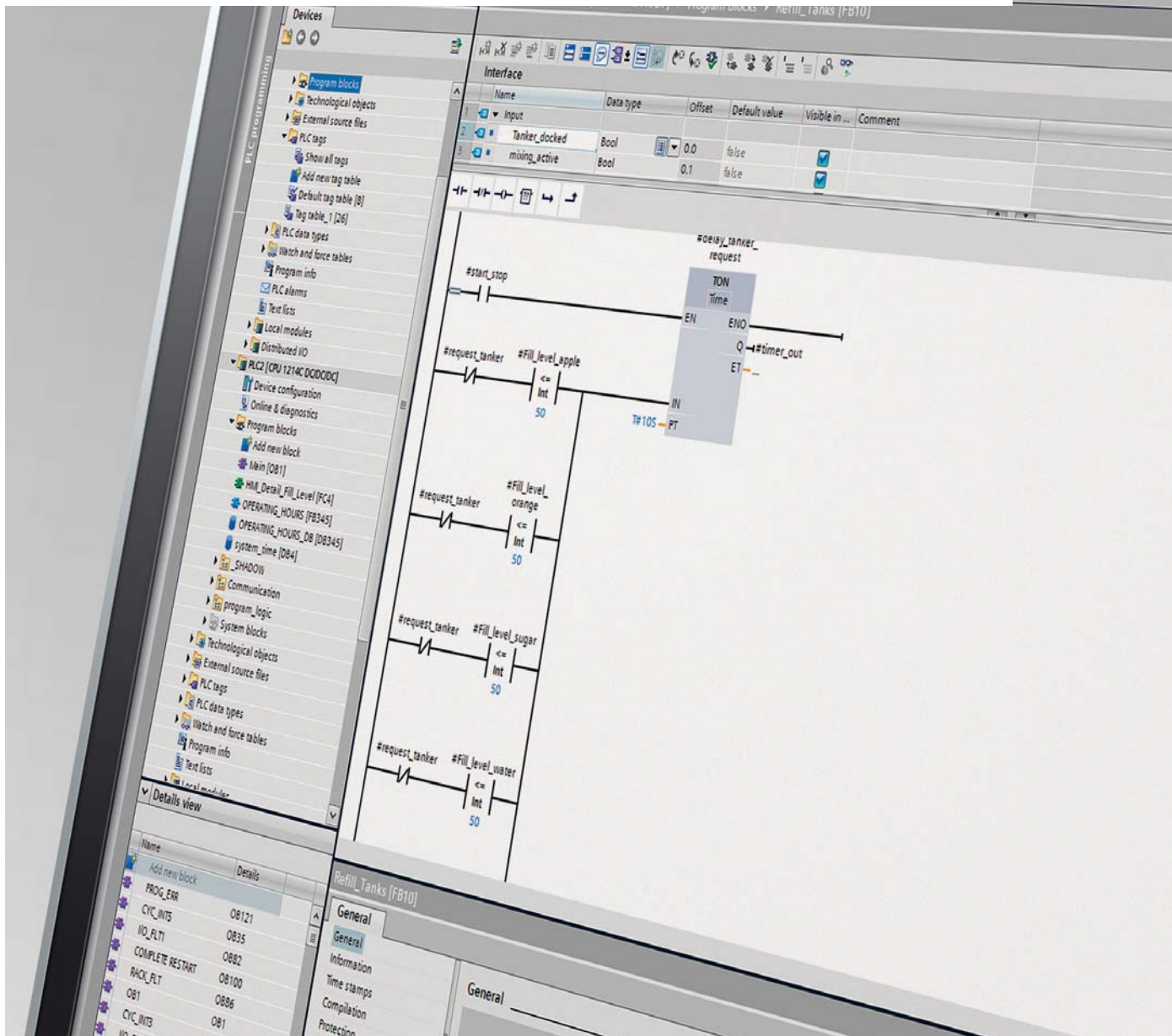
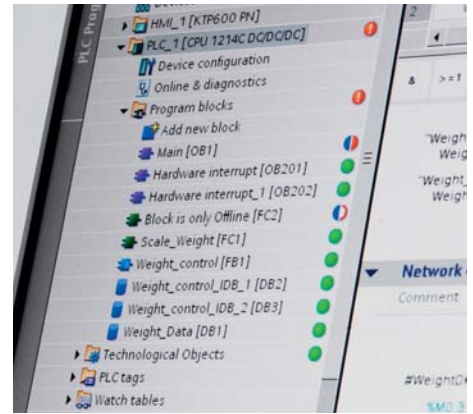
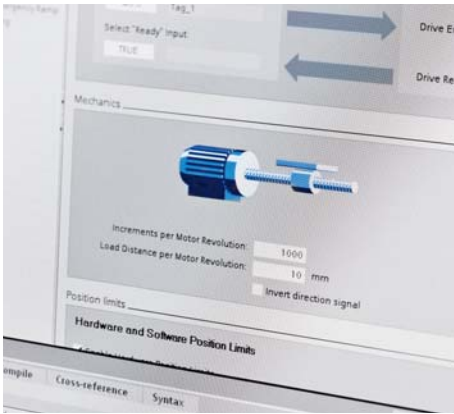
quality of engineering is carried over from the first tested program to all future projects – and is done fast and efficiently, saving you valuable time.

### **High performance with shared services**

The power of TIA Portal is that all automation devices can be handled in the same way and easily interconnected. Shared services such as a single download into all devices in the system, common cross reference, and powerful online functionalities are centrally managed within the framework and can be easily accessed from every editor. When selecting objects or changing editors, built-in software filters speed up your normal tasks, links, and cross references alleviate lengthy searches for instructions or menus, and a “favorites” function helps you find frequently used objects and commands.

### **Reduced engineering complexity**

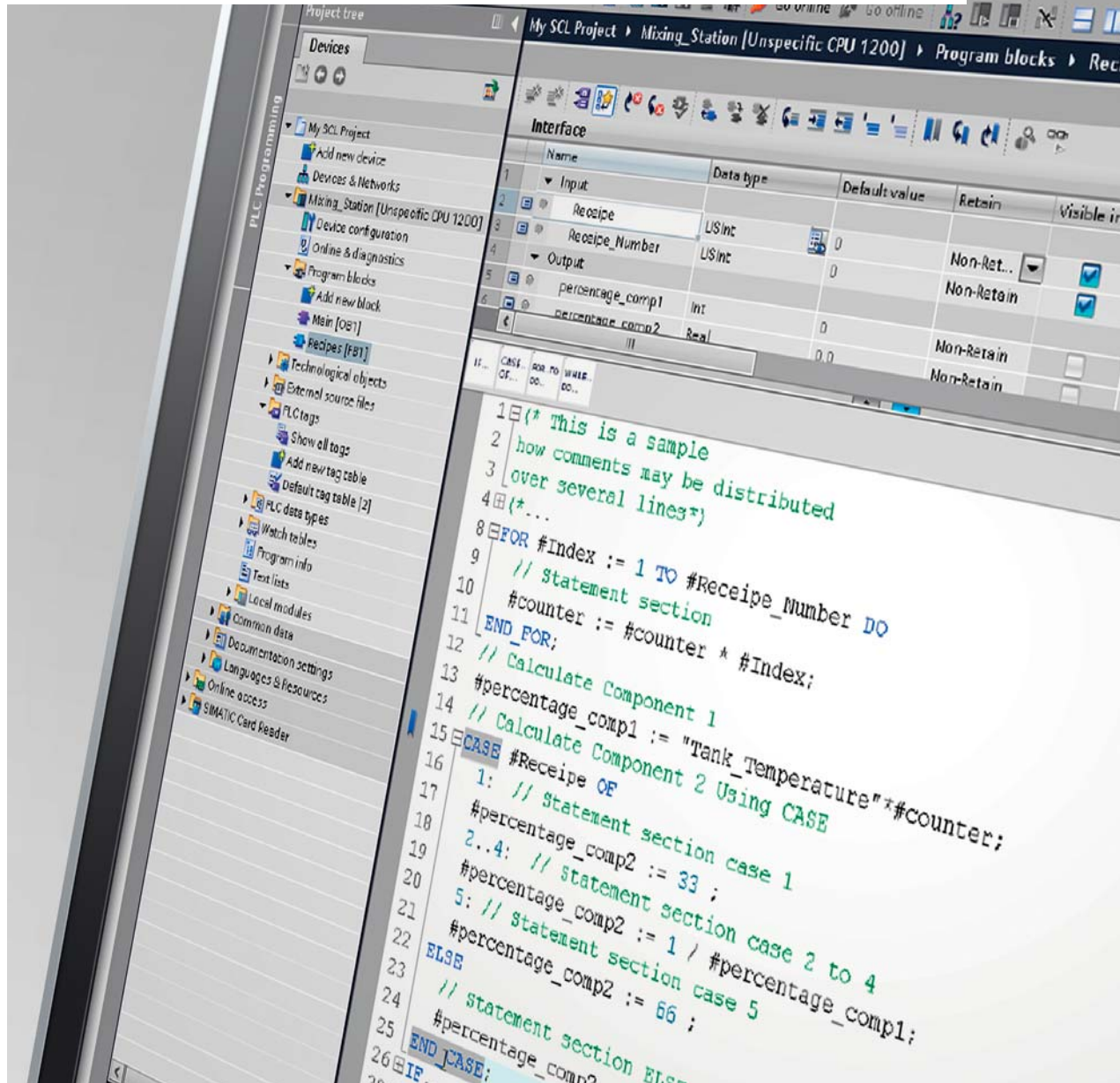
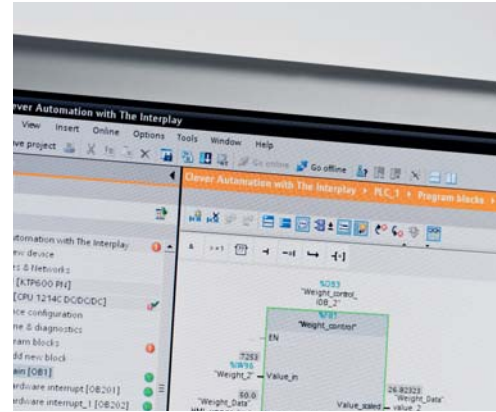
The entire engineering process in TIA Portal is object-oriented, meaning that not only program blocks but also the corresponding signal modules can be managed efficiently in structured libraries. All of these important integrated functionalities significantly reduce the complexity of engineering projects by making the engineering process more efficient throughout all phases of the production life cycle.



### Programming Editors

Managing complexity of engineering projects through graphical engineering framework

# Proven



The SCL Editor  
Easily solve complex tasks with S7-SCL

# A proven basis for innovative results.

Software innovations have a reputation of being short-lived at times. To ensuring your investments are well-spent and go a long way, you have to be able to rely on proven innovations. Continuous developments, a strong drive for innovation and intensive user-testing have gone into developing our milestone in engineering software to ensure just this.

## The innovative power of the world market leader

Our market leadership in automation and drive technology is based on many years of experience, with over 50 years of success with SIMATIC and drives systems. This background along with market requirements has driven the development of TIA Portal every step of the way. The most modern software technologies and innovative user concepts in the market have distinctively gone into our engineering framework. Three years of usability evaluation and global field testing prove our software's validity.

## Investment protection

Customer proximity and a close collaboration with partners from the field, such as system integrators and automation software developers, have made TIA Portal itself proven. Customer requirements were integrated into the framework – adding perspectives from different industries. Due to the fact that you can reuse existing Siemens automation solutions including hardware and project data, you are able to use the TIA Portal software for the development of proven solutions yourself – whatever your expertise.

## Scalable and compatible

Siemens has a complete offering of products for all automation applications. To harmonize the engineering at each product level, one of TIA Portal's main characteristics is its scalability and upward compatibility. Easy upgrades are possible at any time from compact controllers with HMI Panels all the way to PC-based SCADA systems. Both integration and openness are supported at the same time, which means in case of an upgrade, your existing projects may be easily transferred and integrated to the next level of products.

## Commitment to the future

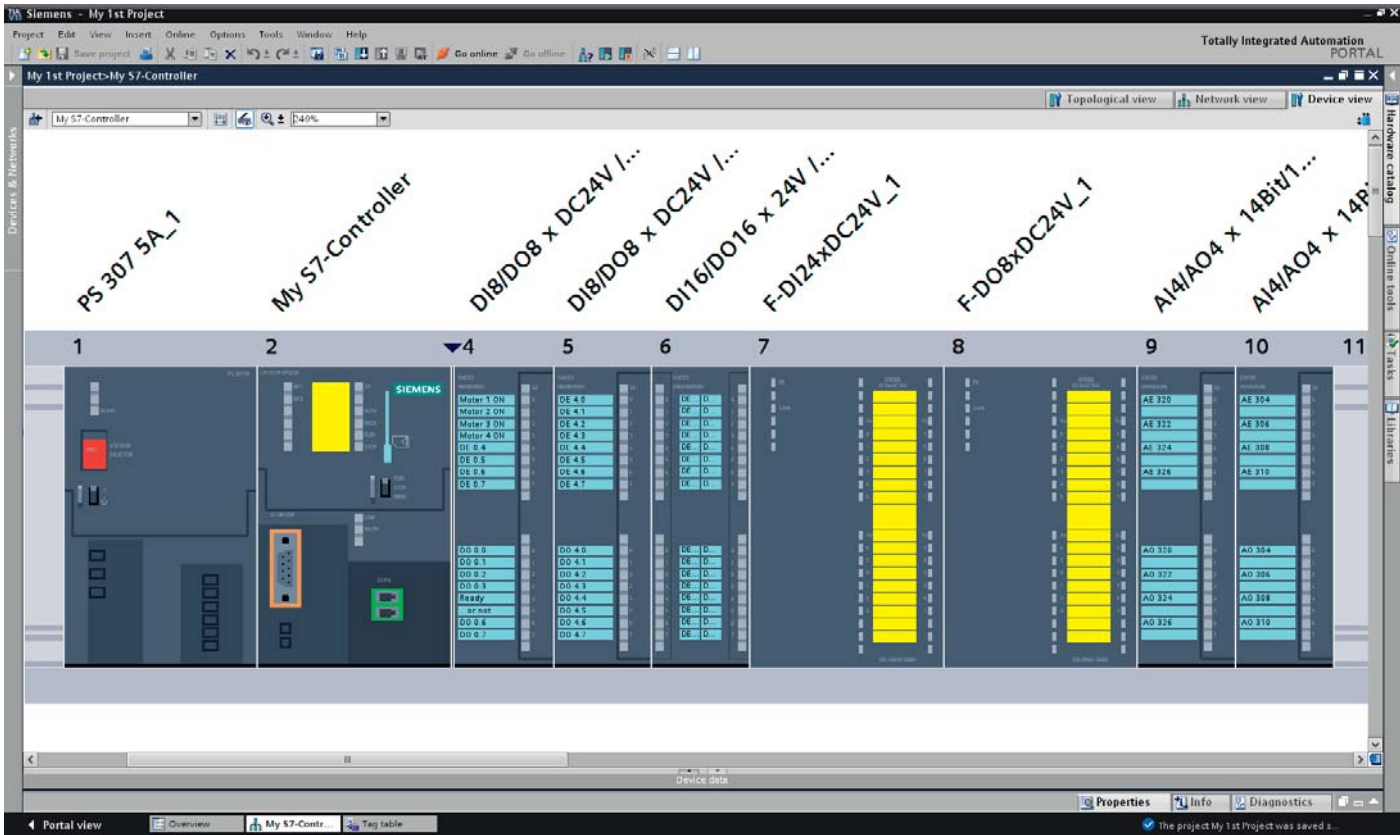
We have made a strong commitment to the future by designing the framework in the best way possible, so that all future software developments may be seamlessly integrated. As always past investments are secured today, in the same way today's investments will be secured in the future.

One framework for all controllers, HMI, and drives



One framework for all of  
your automation tasks –  
today and tomorrow.

The TIA Portal is the engineering framework integrating SIMATIC STEP 7, SIMATIC WinCC and SINAMICS StartDrive. The seamless integration between these software products is unmatched in the industry and yields efficiencies never before possible.



**New device view**

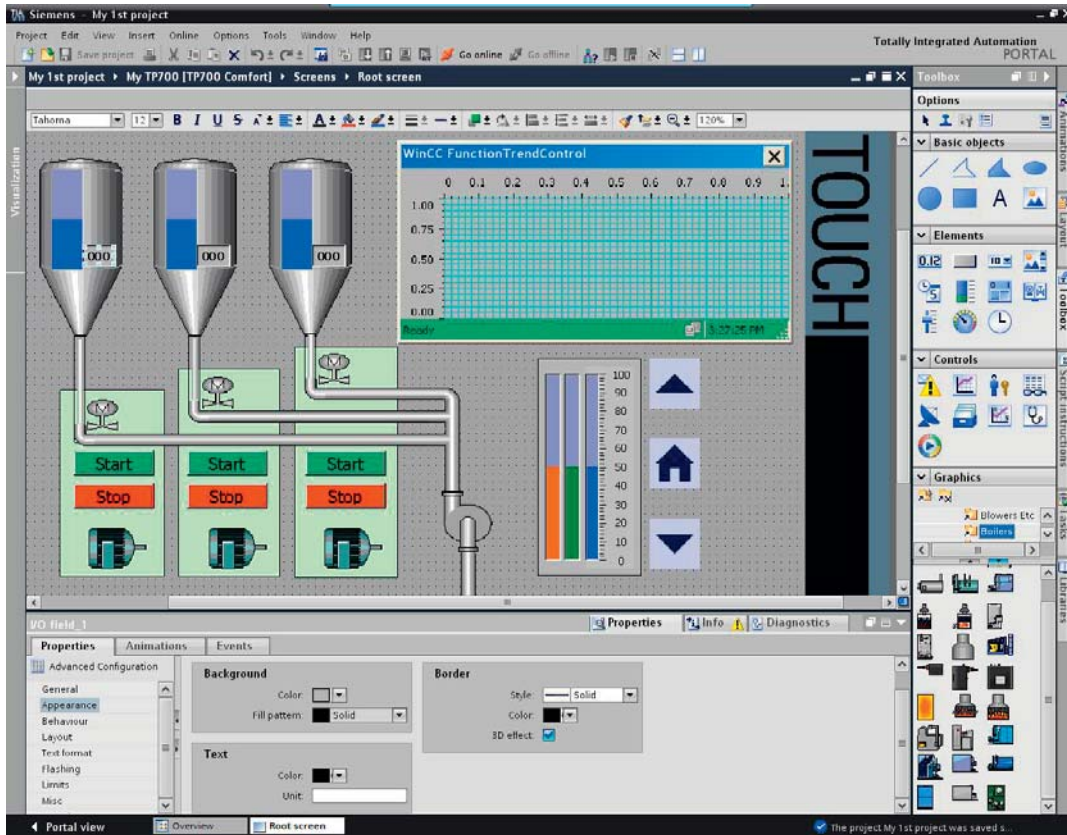
Easy configuration of all SIMATIC Controllers including failsafe components

**Engineering for SIMATIC Controllers**

For many years now, SIMATIC STEP 7 has been the common standard and the leading engineering system for programming controllers. With SIMATIC STEP 7 V11, modular controllers and SIMATIC PC-based controllers may be configured, programmed, tested and diagnosed. This standard is now integrated into our TIA Portal engineering framework to ensure the following:

- Use one engineering package for all of your automation needs with easy and efficient engineering of all SIMATIC Controllers, from micro automation to PC-based.
- Save engineering time with high-performance and intelligent editors that accelerate controller programming
- Greatly reduce your learning curve with intuitive drag and drop connection setups for HMI and network configuration
- Increase your product quality by storing your proven modular engineering components into a library and easily reusing them in future projects
- Protect your investment with upward compatibility for further product innovations
- Protect the well-being of your valuable resources with seamless integration of Machine Safety

## One framework for all controllers, HMI, and drives



### Project View

Easy and efficient configuration of HMI screen objects

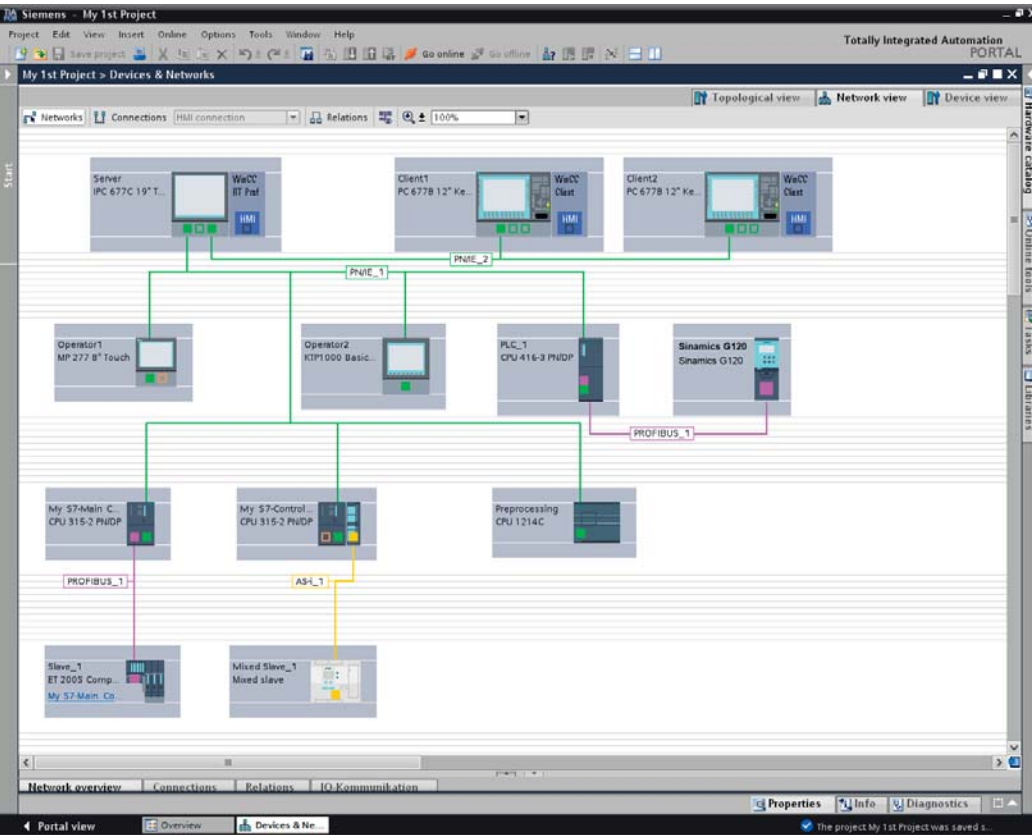
### Engineering for SIMATIC HMI

The spectrum of SIMATIC HMI devices comprises everything from Basic Panels all the way up to SIMATIC Comfort Panels and SIMATIC PC-based solutions to solve all visualization needs including SCADA functionalities. All of these devices can now be programmed with one single software: SIMATIC WinCC V11.

The integration of SIMATIC WinCC V11 into TIA Portal offers:

- Consistent engineering for the entire HMI bandwidth – from a Basic Panel up to a SCADA system for every HMI application
- Protection of your investment with easy upgrading capabilities from machine-oriented SIMATIC HMI panels to a full SCADA solution
- Reduce your HMI development time with task-oriented and user-intuitive functionalities designed for the highest engineering efficiency
- Spend less time configuring system communications using easy drag and drop access to data in all your controllers





### Network View

All devices in one easy view

### Engineering for SINAMICS drives

There are many motion applications found in automation solutions. With many variations of projects from low to high power ratings and applications with simple speed control up to high sophisticated motion control demands, powerful tools are needed for commissioning, operating, and diagnosing. Based on the proven SINAMICS tools, inverter applications using SINAMICS G120 will be configured with StartDrive V11 which will be integrated into the TIA Portal engineering framework to offer the following advantages:

- Save time configuring SINAMICS drives with easy and efficient parameterization tools with setup and application wizards
- Reduce machine downtime with integrated drive diagnostic tools

- Reduce your start-up time with integrated user-friendly, drive commissioning tools
- Easily integrate a SINAMICS drive into your automation solutions using the TIA Portal framework

### Seamless integration of safety

Siemens integrates machine safety functions comprehensively and conveniently for standard automation. This also applies to its engineering. SIMATIC STEP 7 Safety features the same intuitive user-interface concept as is used for creating standard programs. This makes creating safety applications easy. The safety program is created using the Ladder and Function Block SIMATIC STEP 7 languages, together with the integrated TÜV (German technical control board) certified function module.





“The TIA Portal for me has been pretty beneficial in that I’m able to do my HMI and my PLC and the configuration all through easy-to-use, intuitive tools and features designed in the software that makes it all flow pretty smooth.”

**Bruce A. Ritchey**  
Computer Engineer  
Solve  
U.S.A.

## Get more information

[www.siemens.com/tia-portal](http://www.siemens.com/tia-portal)

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