How does your process control system keep up with the challenging requirements?

Our SIMATIC PCS 7 offers you customized and flexible migration solutions to ensure reliable and cost-effective plant modernization.

Answers for industry.
Intelligent migration of process control systems: reliable switchover and user benefits

Never change a system that works unless there is a good reason to do so. Process control systems contain cost-intensive hardware and software and play a key role in boosting the quality, throughput, and effectiveness of production processes. Sooner or later, the time will come when system migration becomes inevitable, with some or all of the components of the previous process control system being replaced by a new generation. Migration – involving the use of new and reliable components, not only protects your production plant from the risk of unscheduled outages, but also opens up new opportunities that were unthinkable with your old process control system. Change on this scale needs to be planned carefully, so make sure you choose a reliable and experienced partner.

50 years of experience in process engineering

Siemens has been a leading supplier of process technology for more than 50 years and process control systems have been at the core of our portfolio since the early 1980s. The examples on the following pages will show you that Siemens is on your side when migrating your systems. Move briskly into a successful future with us.

Process control system migration is an everyday event for our experts and certified Solution Partners. It involves replacing not only older systems from our own manufacture (e.g. TELEPERM M or APACS+) in an effective way, but also process control systems from other manufacturers.
The answer to complex requirements

As the demands placed on process automation systems continue to grow, for example from new standards and regulations, your process control system will also have to meet increasingly sophisticated requirements.

However, it is your market which exerts the greatest pressure. Against the backdrop of ever tougher competition, your efforts will focus on increasing productivity and flexibility while reducing costs and the use of resources.

Even if your process control system is still running reliably today, you should be asking yourself whether it will also be able to meet the requirements of the future – and how much extra it will cost you.

Our solution: SIMATIC PCS 7

Our innovative and powerful process control system meets present and future requirements:
- Increased plant availability
- Greater flexibility in production
- Enhanced system usability and ergonomics
- Improved product quality and enhanced documentation and verifiability
- Continuous availability of up-to-date production data
- Linkup to higher-level information and production control systems
- Minimized maintenance and personnel costs
- Reduced emissions and consumption of resources

The pioneering process control system

SIMATIC PCS 7 is a powerful and proven process control system which is at the heart of our Totally Integrated Automation (TIA) philosophy. This unique open system architecture represents an end-to-end range of perfectly matched products, systems and solutions for all industries – from field level right up to ERP level. Totally Integrated Automation provides the perfect answer to increasingly complex demands because the interoperability of all the components helps to reduce your Total Cost of Ownership (TCO) and optimize all your production processes. This, in turn, increases the productivity of your plant and improves your competitiveness.

SIMATIC PCS 7 also sets standards when it comes to sustainability, energy efficiency and the protection of natural resources. You can, for example, use the advanced process control (APC) algorithms of our process control system to reduce the consumption of energy and raw materials and to increase output. Intelligent powerrate measurements also help you to manage all the plant’s energy requirements which allows energy costs to be reduced by up to 20%. This will allow you to reconcile frequently conflicting aims of ecology and economy.
The highlights at a glance

SIMATIC PCS 7 offers a range of functions, providing you with outstanding performance and benefits through the life cycle of your plant.

**Engineering**
- Advanced Process Control (APC)
- Library with enhanced functionality
- Multi-user engineering
- Safety programming with cause and effect matrix
- I/O modules for hazardous areas
- Adaptable function block library
- Engineering best practices manual

**Installation and commissioning**
- Fully integrated HART, PROFIBUS DP/PA and FF
- PROFIBUS and HART redundancy
- Time stamping at module level down to 1 ms
- ET 200iSP modules for hazardous areas up to Zone 0
- Forcing of block inputs

**Operation**
- Intelligent alarm management
- User-defined alarm filters
- 16:10 und 16:9 screen resolutions are supported
- Modern and ergonomic user interface
- Expanded curve display and functionality
- Intuitive navigation
- Automatic evaluation of process value quality
- Expanded control algorithms using APC

**Maintenance and service**
- Central, system-wide visualization, diagnostics, and maintenance of all process control components, including mechanical assets
- Integrated diagnostics of intelligent field devices
- Hot swapping of modules (replacement during operation)
Stepping into the future of process control technology

Every migration project is part of your life cycle plan for your plant and has unique requirements, which is why a comprehensive strategy is indispensable for the success of the project.

Based on our established expertise in this field, we will work with you to define the steps that will lead you to your goal of modernizing your control system.

The journey from today ...

A migration project differs from a new installation because it involves more than just defining the goal. The first step is to carry out an inventory of the existing system in order to identify the right points of approach for a migration. The following questions play a key role:

- What is the status of the existing system? What components have already been discontinued? Does the manufacturer still provide sufficient support for the system?
- Is the continuous availability of the system ensured?
- Is there a sufficient number of replacement parts on hand or available at acceptable prices?
- Are maintenance costs increasing?
- Is the service for the system still satisfactory?
- Will the required experts still be available in the future?
- Does the process control system still meet all requirements regarding flexibility and adaptability?
- Can the system satisfy the increasingly sophisticated requirements placed on product quality, resource utilization and production flexibility?

These are the questions that you have to ask yourself – questions that we will be happy to help you answer. After all, every migration project begins with a careful analysis of the baseline situation, the goals of the project, the available budget.
... into the future

If an existing plant with an ageing process control system is to be adapted to meet more stringent requirements, migration to a more modern system is unavoidable. At the same time, this step opens up new opportunities for process management and optimization, the diagnosis of faults or the integration of fieldbuses and new field components. In addition, thanks to today's open interfaces, more flexible operating concepts such as the use of web clients or the linking of control rooms can be implemented more easily than with systems of the previous generation.

This gives rise to the following questions:
- Which parts of the process are especially critical?
- Which control loops are complex?
- Where can new automation concepts make the process simpler, more flexible and more effective?
- What operating sequences are frequent and decisive?
- What alarm management system would unburden the operator and make the process safer?
- Where is the most energy used or where are the most resources consumed?

The second step of the analysis focuses on identifying the greatest potential for optimization and on the properties of SIMATIC PCS 7 which can best be used to achieve this.

All these considerations result in the creation of an optimum migration concept which may also show you, in the form of a ROI analysis, how and when your investment will pay off.
Intelligent migration protects your investment

Modernizing a process control system does not usually mean having to tear out and replace everything from the operating stations to the field-level wiring.

Instead, migration can always be implemented on different levels and only those components that no longer meet current requirements need to be replaced, while those parts that are still working reliably can be retained and integrated. After all, the point is to safeguard existing investments and to keep anticipated investment costs to a minimum.

Siemens can provide optimum support by showing you a number of alternative ways to migrate to SIMATIC PCS 7.

Legacy systems from Siemens

For our older process control systems, we can offer you a complete range of migration solutions – on all levels:

- The replacement of old HMI systems with the modern SIMATIC Operator Station
- Tool-aided conversion of graphic images
- Replacement of the old automation systems with the powerful SIMATIC PCS 7 controllers, with integration of the existing I/O level. This minimizes costs and possible downtimes
- Tool-aided conversion of the existing controller configuration to SIMATIC PCS 7 – this means that the existing, optimized automation functions remain available.

At the same time, all functions of the new system are available without any restrictions.

- Replacement of the existing I/O level with the proven ET 200 series. Thanks to suitable cable and connector solutions, in most cases there is no need to rewire the field level, which saves costs and avoids various sources of error
- Gateways between the old system and SIMATIC PCS 7 for exchanging data

When it comes to migrating our own legacy systems such as TELEPERM M, APACS+, TI505 and PMC/OpenPMC, there are many outstanding references from hundreds of successful projects in numerous countries. So you can be certain that your plant is in good hands with us.
Legacy systems from other manufacturers

Even when it is a question of migrating old systems from other manufacturers to SIMATIC PCS 7, we are your ideal partner. We pool the required expertise for this in our Migration Support Centers and can therefore offer you customized migration concepts for ABB, Honeywell, Emerson, Rockwell or Yokogawa systems.

Here too, migration solutions are used at all technical levels:

- HMI modernization/replacement for legacy systems, e.g. via OPC coupling to our universal SIMATIC PCS 7/OpenOS operating station
- Replacement of the legacy automation systems with the powerful SIMATIC PCS 7 controllers
- Integration of various older I/O families into SIMATIC PCS 7 via PROFIBUS connections and gateways
- Tool-aided conversion of the existing engineering to SIMATIC PCS 7 – using intelligent tools that implement technological functions rather than blocks, thereby obtaining results that come close to re-engineering
- Field termination assemblies, cable and connector solutions for connecting existing field wiring to powerful I/O modules of the ET 200 series
- Gateways for data exchange between old and new systems, as long as both systems are still operated in parallel

Based on the technical expertise which our specialists from the SIMATIC PCS 7 Customer Support and Migration Support Centers are constantly increasing, innovative concepts, tools, and solutions are developed in order to carry out migration projects even more efficiently in the future. We are also implementing our projects around the world in cooperation with hundreds of certified partners. These Solution Partners are not just certified specialists for SIMATIC PCS 7. Many of them also have extensive experience with older process control systems. Thus, we have carried out a large number of successful migration projects over the last several years from third-party systems to SIMATIC PCS 7: e.g. from ABB Contronic P, Contronic S, Infi90 and Sattline, Honeywell TDC 2000 and 3000, Emerson RS/3 and Provox, Foxboro I/A Series and many other process control systems.
Comprehensive support throughout the entire migration project

Our top priority with every migration project is to minimize technical and financial risks and to protect existing investments in the long term.

This is why we provide you with full support – from the time we carry out the first precise analysis of the planned migration to the time we implement individual service options during the entire life cycle of your plant.

Our solution is perfectly tailored to your requirements and you can always count on us to ensure that the migration will be successful, sustainable, and reliable.

Minimizing downtimes

Many migration strategies avoid downtimes altogether while others can be planned to ensure that downtimes are kept to a minimum. Upgrading critical system components can be handled by devising fallback strategies, based on close cooperation between your experts and ours as well as a precise analysis and planning.

Experts for your plant

Migration is a matter of trust. This may well be the reason why you only want to entrust your plant to an integrator whom you have known and trusted for years. This is no problem because we are quite willing to collaborate with all system integrators. After all, we have qualified many of them to become PCS 7 Solution Partners in comprehensive training courses.

Training

The success of a migration project does not just depend on the technical implementation. The people behind it are just as important. Your maintenance and operating personnel have to support the decision to migrate to SIMATIC PCS 7 and it is essential for them to identify with the new system. That's why we support your project with a wide range of training activities: courses, workshops, online training for your automation experts as well as your maintenance and operating personnel. This way, they will become enthusiastic about the benefits of SIMATIC PCS 7 in just a short time, actively support the migration project, and be able to work easily with the new system from the very beginning.
Service throughout the entire life cycle

When it comes to modernizing your process control system, you should not just consider the one-off investment costs, but also the costs occurring during system operation, servicing and maintenance. In other words, the important thing to consider is the Total Cost of Ownership (TCO) – for the entire life span of your system, which may be 15 or even 20 years.

This is another area where we can provide you with a cost-effective and transparent solution. However, since no two process plants are the same, a Technical Support Agreement (TSA) will be precisely tailored to your individual needs. We will offer you individual service modules for a defined scope of services, allowing you to maintain or increase your plant’s productivity in the long run, based on transparent and plannable costs.

Benefits from choosing Siemens

You can expect the following benefits from migrating your existing control system to SIMATIC PCS 7:

- optimized and flexible process sequences
- significant savings in energy and resources
- a deeper insight into your processes
- improved alarm management
- reduced servicing and maintenance costs

Our migration solutions help you protect your investment.

Ask us to provide you with a customized offer and you will be impressed by the many benefits and new opportunities.

Put us to the test and contact your Siemens sales partner.