Omnivise T3000 – your bridge into the future

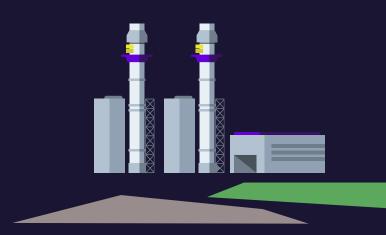
Be in charge of change with the latest updates to our proven control system



Your bridge into the future is built on a strong foundation:







Innovating a proven I&C system

Tomorrow's energy landscape places new demands on I&C – it must be scalable and cyber-secure – and it must be able to react flexibly to current developments with innovative approaches. That's why Omnivise T3000 is forging a new path based on its proven track record in daily business. It's building a bridge to the energy landscape of the future piece by piece with continuous innovation.

A new name, but the same great value for you

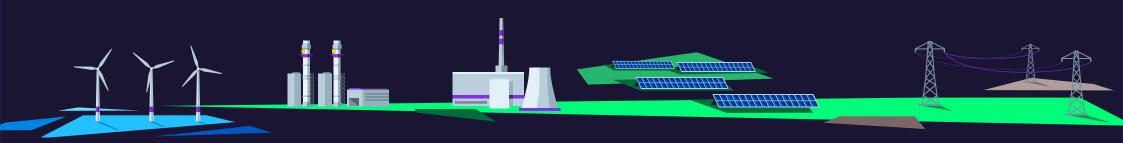
SPPA-T3000 has been the name of our I&C system for decades. It's known for its reliability, versatility, and cybersecurity. But the energy markets are changing rapidly – and with them the demands placed on you and your assets.

Born from a strong tradition

We know from decades of experience how our customers generate power. And we have supported you on your way to ever-more complex plants. Today an I&C system needs to do more – and handle distributed sites as well as large centralized power plants.

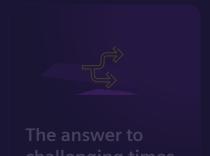
Your bridge into the future

Today and in the future, identifying opportunities in the energy market and seizing them immediately is key. The innovations in Omnivise T3000 are aimed primarily at making improvements that impact the market more quickly – so that opportunities are transformed into sustainable success.



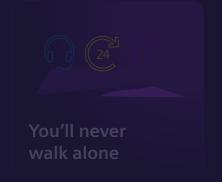


Four pillars of sustainable success









Omnivise T3000: Performance highlights at its core

A control system is only as good as the benefits it offers you. Once you start working with Omnivise T3000, you'll immediately notice how great it is. The intuitive user interface, the integrated simulator, system operation that's not tied to specific hardware, the ability to remotely access your data – all combined with a comprehensive cybersecurity concept. Omnivise T3000 offers you every opportunity for long-term success in the energy market. Not to mention our experienced project teams who'll support you worldwide with their wealth of expertise.



New innovative features

The great thing about Omnivise T3000 is that its new functions and innovations are geared to the operational practices of today and tomorrow. And they're derived from decades of experience in the continuous development of an already well-proven product. And the innovations we're making today are opening up new dimensions of possibilities for Omnivise T3000 users.



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Learn more

T3000 Simulator

Learn more

T3000 Cybersecurity

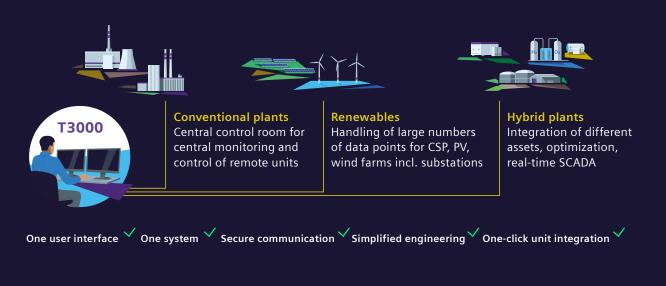
Learn more

T3000 Virtual

Learn more

T3000 SCADA

SCADA systems play an important role in the diversification of the energy market, whether it's in a centralized single plant or in a combination of several distributed generation plants. Omnivise T3000 SCADA is designed to integrate and automate these plants, simplifying their operation and monitoring from a central control room. Typical plants include virtual power plants consisting of a large number of decentralized plants, offshore wind farms, as well as hydrogen plants and hydro or geothermal power plants.



Your benefits

- > Scalable for all plant sizes and tasks
- One I&C system for all plants, with optimized personnel requirements
- Local control of assets if required
- Optimal transparency of operating data for all plant components
- Uniform user interface for all processes, experienced operators
- Very flexible system that can be adapted to new developments at any time

SCADA whitepaper

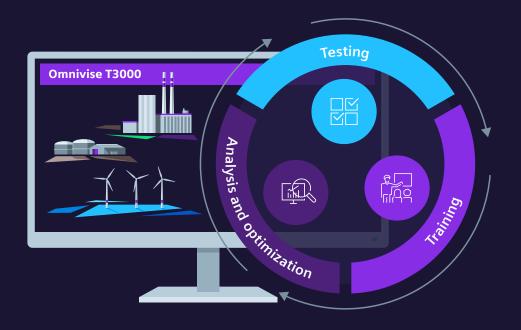
Omnivise T3000 for offshore wind

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T3000 Simulator

A decisive advantage of digitalization is the ability to create a virtual model of all plants and their processes. This digital twin of the plant can be used to simulate how changes to plant parameters or components will affect performance. Or to train employees on real operating tools – because unlike conventional simulation tools, the new T3000 Simulator is actually part of Omnivise T3000. It therefore uses the same user interfaces, dashboards, and controllers as the live system – there's just no impact on actual operation.



Your benefits

- Simplified training with no risk of system failure (training on the digital twin)
- ▶ Test/develop new processes and procedures realistically and without risk
- Avoid errors in advance thanks to simulation under real production/manufacturing conditions

T3000 Simulator flyer

T3000 Simulator reference

T3000 Simulator

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T3000 Cybersecurity

We've been working for the energy industry and other critical infrastructures for many decades and have accompanied their digitalization from the very beginning. So it goes without saying that we also have the ideal concepts for reliably protecting critical power generation infrastructures in the area of cybersecurity – along with our experience in many other industries.



Your benefits

- ▶ Built-in cybersecurity to protect your plant
- Defense-in-depth concept to withstand external attacks
- ▶ IEC-certified system and development process and other certifications according to numerous internationally recognized standards including NERC, KRITIS, and IT Sicherheitsgesetz 2.0
- <u>Cybersecurity Operations Center (cSOC)</u> helps you defend against or resolve cyberattacks 24/7

Cybersecurity brochure

Cybersecurity whitepaper

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T3000 Virtual

Omnivise T3000 consistently follows the path to cost optimization. Virtualization is part of the concept – and thanks to hardware-independent operation on servers at internal or external data centers and the use of Thin Clients for operation and monitoring, expensive hardware updates are kept to an absolute minimum. At the same time, Omnivise T3000 Virtual simplifies your IT landscape and makes it easier to keep your components and terminals up to date with central updates.



Your benefits

- Significantly lower IT maintenance costs (including fewer devices to maintain, centralized firmware updates)
- Increased availability thanks to a simplified homogeneous IT-hardware infrastructure
- Independent HW lifecycles, reduced CAPEX
- ▶ IT-hardware infrastructure

T3000 Virtual flyer

T3000 Virtual reference

T3000 Virtual

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Comprehensive applications

Power generation was, is, and will remain our business in all its manifestations and applications. With Omnivise T3000, our customers benefit from the extensive experience we've acquired over the decades as developers of the leading I&C system, as well as the hardware for power plants, energy transmission, and storage.





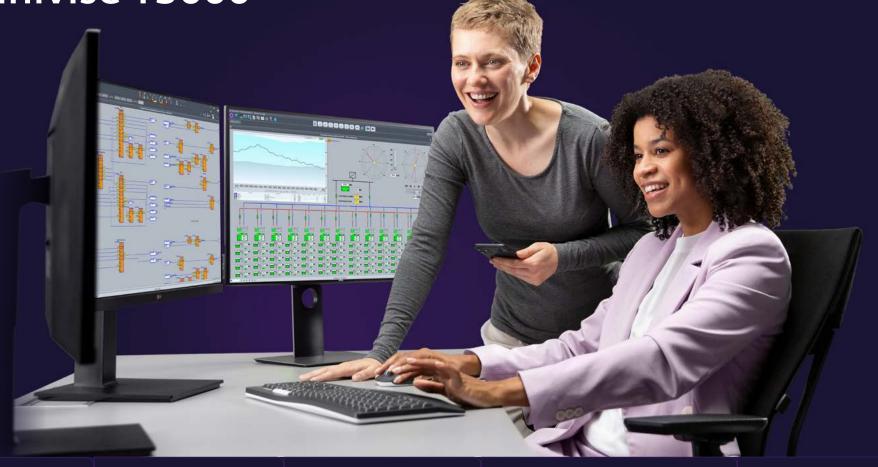
Proven references

When we say that we're close to our customers all over the world, it's true. As a reliable partner, we're supporting energy producers worldwide in advancing the energy revolution in about 4,000 projects. Omnivise T3000 is just one of many solutions we provide that make a difference and help our customers turn the challenges of the future into opportunities.





Dive deep into the details of Omnivise T3000



Maximum integration for the highest connectivity standards

03 Innovative features

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As we've learned from decades of designing distributed control systems for power generation, the foundation for efficient control of the entire plant is openness to variable communication standards along with secure communication in internal and external networks.

Whether it's access to third-party systems using a specifically qualified terminal server or the integration of internal and external systems -Omnivise T3000 is designed for the highest demands for communication security and openness.

It supports common standards in industry communication as well as future-oriented IEC standards. Traditional control systems based on proprietary protocols can be connected to the HMI, and individual applications can be accessed via HTML5 or RDP within the operator's work environment. Omnivise T3000 opens up a world of communication opportunities. End-to-end data flows and central operability make your plant easier and more efficient to operate.



Integration into management IT

Good decisions are based on real data. From operational and performance data to defined KPIs and status information on components: Omnivise T3000 provides you with whatever you need from the current and ongoing process.



Open communication

Omnivise T3000 supports common industry standards as well as IEC and OPC standards. It can even connect traditional control systems that are based on proprietary protocols to the automation level or the HMI. Users can access further applications from the Omnivise T3000 Workbench via HTML5 or RDP.



Access and data distribution

Using role definitions, a comprehensive authorization concept provides each user with exactly the information and data they need at any given time. For full control and fast, well-founded decisions in plant operation, on-site or even from a central control room.



Process interfaces

When it comes to communication to the field, Omnivise T3000 fulfills every requirement. From HART, PROFIBUS, and PROFINET to traditional I/Os and smart field devices, and from OPC UA to IEC – the process interface can be scaled to any plant configuration.

One system to rule them all

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With Omnivise T3000, we use a single system for engineering, diagnostics, and automation. Your advantages are obvious: In addition to not needing extra hardware or even separate systems, you also have fewer interfaces, which is beneficial in many ways. First of all, your effort to keep data consistent is reduced, as is the risk of intrusion. Secondly, the system makes it especially easy for you to implement engineering changes and new tasks.

In addition, Omnivise T3000 is based on a client/server architecture that helps reduce investment costs by replacing individual operator terminals and systems with inexpensive Thin Clients consisting of a monitor, a network connection, a keyboard, and a mouse.

Clearly defined levels and security zones

Omnivise T3000 and its client/server architecture offer another advantage: All the levels are separated from each another with protocol changes between the field, automation, application, and operation and monitoring levels. This not only supports communication security, it's also a robust foundation for the system's security zone architecture. Communication within the system is in complete conformity with common industry standards.

Your benefits

- ▶ Maximum availability of the control system and the communication infrastructure
- ▶ Long-term, worldwide availability of all components
- Security by design

04 Comprehensive applications

Services for I&C systems

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We offer corrective and preventive maintenance services that help you prevent unplanned downtime and ensure the smooth interaction of all plant components. They're both supplemented by cybersecurity services. Other services focus on performance and cyber enhancements and use IoT data for comprehensive analyses, while lifecycle services keep your plant up to date. Training and consulting ensure that you and your personnel can make the right decisions under all circumstances related to the operation and future extension of your plant's facilities.



Learn more about:

I&C performance enhancement programs

I&C system corrective maintenance

I&C system preventive maintenance

Training offered by the Power Academy

One for all

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A single intuitive user interface for every task and all users in every operating scenario – that's what distinguishes Omnivise T3000, thanks to its continuous development throughout the various SPPA-T3000 releases. And it runs without proprietary software on a standard browser. So every employee sees what they need to know, when and where they need the information: from the status of the entire plant (monitoring) to automation and other operating activities (control).

Windows-style drop-down menus, pop-up windows, multi-windows, simple search functions, point information, and many other features make the work of operators and engineers easy and intuitive, even with simultaneous workflows on a single obiect level.

The toolbox your plant needs

04 Comprehensive applications

Omnivise T3000 was designed for power generation - with unique electronics technology, control algorithms, function libraries, and concepts derived from our in-depth plant expertise that rely on timeproven standards. Over the longer term, you can keep building on this powerful foundation, because we continue the development process to support you whenever and wherever you need it.

One for all

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Effective support in the event of an alarm

When daily routines are interrupted by unavoidable incidents, you need your operators to take fast and intelligent action. Omnivise T3000 helps them get the unit back to normal again by providing the right cues and built-in decision support:

- Enclosed: Alarms and warnings are accompanied by detailed information and guidance for rapid resolution.
- Comprehensive help: In the event of an alarm, the operator is guided through root cause analyses, gets one-click access to relevant data like automatic first-value searching, and is offered precise handling instructions so they can react quickly.
- ▶ Message flood under control: The inventive alarm handling simplifies operation in the event of a fault: for example, by re-directing or archiving unimportant messages and suppressing subsequent messages.

Easy use and efficient training

All control and fail-safe functions are observable on a unique, single-user interface on all connected terminals and are available at a glance for all tasks – with quick and easy navigation between all views in the same window. Of course, the basic layout can be easily modified to meet your specific needs in terms of prioritization, individual workflows, and ergonomics.

Optimized hardware and software

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Hardware and software architecture optimized for power-plant process standards

Omnivise T3000 is designed for the current and future requirements of power and heat generation processes and SCADA installations of all sizes. The system was developed based on our in-depth plant expertise and time-proven standards for creating the hardware, special control algorithms and concepts, unique closed- and open-loop controls, and a huge, comprehensive function library.

If there's one constant in our customers' business fields, it's rapid change. Companies need to continuously adapt to new conditions in their markets – and modify their processes accordingly. This has a direct impact on the control system, and Omnivise T3000 is fully prepared thanks to its object-oriented approach.

Embedded Component Services™ (ECS)

Traditional control systems use a variety of different subsystems, each of which is designed for a specific task. The concept of Embedded Component Services in Omnivise T3000 eliminates subsystems. It's object-oriented and makes keeping data consistent simple. All information on individual process components is integrated into a data object – from engineering, operation, and diagnostics to alarming and archiving.

Your benefits

04 Comprehensive applications

- Consistent views at all times
- ▶ Flat system architecture with minimal number of components and interfaces
- ▶ No subsystem boundaries, which means less administration effort
- Easy online upgrades and extension of components
- ▶ Hardware-independent software architecture

Optimized hardware and software

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ECS: Data consistency for enhanced safety and availability Object orientation means that it's much easier for you to keep your control system up to date and to modify it to meet new requirements. That's because the data from all of the components embedded in every object in the control system. In addition, all the data and information used in the system always comes from a single source.

Therefore, only this one source needs to be changed for all the objects in the system that work with this information to be updated. Another advantage of ECS is the multi-view principle: Plant operators can choose a view that optimally meets the requirements of their role.

Built-in downtime reduction and more flexibility Compared with a traditional DCS, where the plant display and function diagrams have separate data sources. Omnivise T3000 stores all the relevant data in its integrated objects. With its implicit data synchronization, Omnivise T3000 eliminates the explicit data synchronization between the engineering steps that's found in a traditional DCS, which reduces downtime when you make changes to the system.

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Even the most reliable control systems sometimes get out of step. When this happens, help is needed quickly to prevent a long and expensive outage. In most cases, this fails because the system specialist(s) needed for the service job on site is/aren't available at the plant within the required time window. With Omnivise T3000, you can rely on our Expert Center for I&C and Electrical Systems to assist you with troubleshooting via remote maintenance around the clock for rapid resolution.

In the event of a problem with your system, our Remote Service Experts can log into your system and start the remote maintenance procedure to make it right. With direct access to the engineering data in your plant, and backed by years of best-practice experience, teams of experts selected on the basis of your specific fault type bring their specialist knowledge to bear, significantly speeding up fault analysis and detection. The Remote Expert Center steps in at the vital moment to resolve faults ininstrumentation and distributed control systems via remote maintenance and quickly get you back online. The Remote Expert Center is available 24/7, 365 days a year. If it proves impossible to solve the problem via remote access, the Remote Expert Center activates its on-site task force and the spare part service. This significantly speeds up the resolution of power plant faults or prevents them from becoming a problem. Thanks to its global service network, the Remote Expert Center's entire service portfolio can be provided at a fixed price to provide a highly cost-efficient solution.

Your benefits

- ▶ Safe, direct remote maintenance of your power plant by the Remote Expert Center for fast expert support
- More efficient fault diagnosis, analysis, and troubleshooting
- ▶ Scalable solutions and additional services optimally adapted to your plant requirements
- Available around the clock, 365 days a year, with an average problem-solving time of less than 60 minutes

See the video about our Remote Expert Center

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Stage 1 Cyber Inspection

Analysis based on plant data, for preventive detection of cyber vulnerabilities

Stage 2 Cyber Hotline

Detection and triage classification of incidents, Remote Support Cyber Omnivise T3000 Ecosystem

Stage 3 Incident Response

Analysis, containment, eradication, recovery, and lessons learned from security incidents

Cybersecurity Operations Center (cSOC)

Cybersecurity services are becoming more and more critical and complex. We've therefore developed our own well-proven security principles for all customer-facing services and bundled them in the cSOC concept – the Remote Expert Center for Cybersecurity Services. Three stages optimally protect your plant:

The combination of new cSOC and existing REC capabilities ensures that all power generation companies with Siemens Energy I&C equipment will now have support to prevent both normal technical issues and emerging cyber threats. This combined approach is essential for safeguarding our customers' operational efficiency, availability, and regulatory compliance now and into the future.

Download the cSOC whitepaper



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Your reliable choice for BoP: Automation system series 3600

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Availability starts at the component level

Our hardware components were developed specifically for energy applications based on our decades of experience as a manufacturer of all types of power plant technology. You'll notice this in their optimized performance that's geared to the operation of power generation plants.

Automation system series 3600 - perfectly scalable

The series 3600 automation system is our hardware platform for powerful, deterministic automation functions and IO-level connectivity that are specifically designed for your power generation and SCADA applications. Your system configuration determines the number of automation servers. It can be scaled according to the complexity of your automation tasks. To meet the requirements of complex automation systems and to minimize the risk of system downtime, series 3600 uses fault-tolerant configurations. They're based on the 1-out-of-2 principle and are capable of a bumpless switch to the backup system in the event of a fault.

Leading features and benefits

- ▶ Embedded PC architecture in the redundant configuration with the components:
- Redundant CPU 3610 for control tasks
- Redundant CCU 3610 as interface to IO system
- CBU 3610 as the base unit for CPU/CCU
- ▶ Hardware in the series 3600 is specifically designed for the tough conditions in industrial environments
- ▶ Real-time capabilities needed for demanding control and closed-loop applications
- ▶ Define up to eight different execution cycles, with the fastest cycle at 100 ms
- ▶ The series 3600 I/O system is the ideal interface between the field and the process

Your reliable choice for BoP: Automation system series 3600

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series3600 IO system

The modular system supports hot-swapping of individual modules and redundantly acquires the analog and binary process variables from transmitters at your field level via a process interface with the series 3600 Automation Server. Operation or automation commands are also transmitted to the field level via this interface. For higher availability and minimized influence of the field on the modules, each IO module is supplied with power redundantly and separately from the field level.

Benefit from the full range of basic IO functions in the series 3600 IO system:

- ▶ Digital inputs and outputs
- ▶ SOE with 1ms resolution
- Pulse input
- ▶ Analog inputs and outputs
- ▶ Thermocouple input
- ▶ RTD input
- ▶ Analog inputs and outputs support HART

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