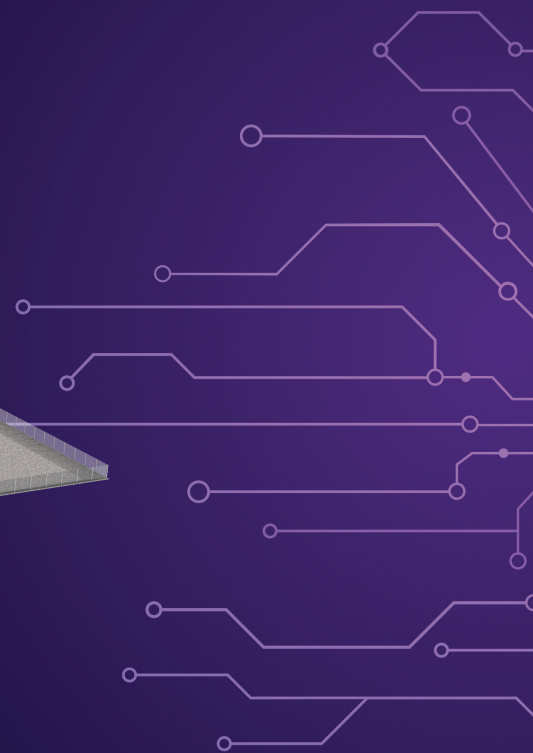
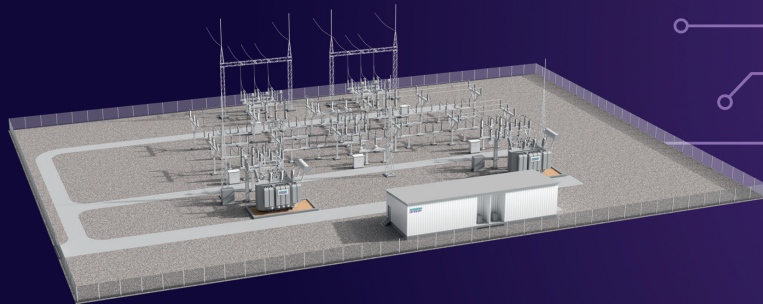


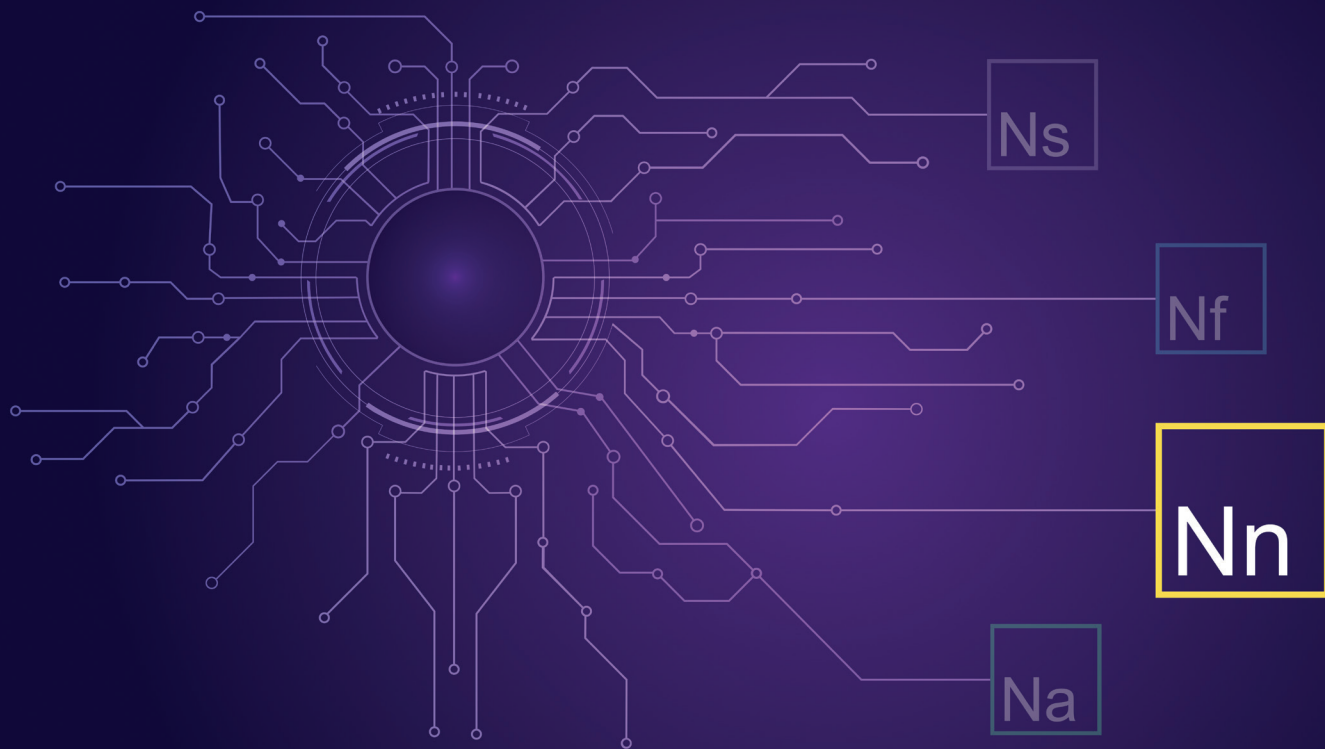


Substation PAC engineering and integration services

Noedra Node suite for substation digitalization
Listen to the grid's heartbeat.



Noedra Node
Substation Digitalization



The Noedra framework

Noedra is Siemens Energy's digital framework - the Mind of the Grid - connecting Grid Technologies' intelligent solutions, from sensing and control to software and advisory, into one coherent ecosystem.

By transforming grid data into clarity, coordination, and confident action, Noedra enables operators to manage complexity with intelligence and control.

Each Noedra suite expresses a specific way this intelligence acts across the grid.

Together, they protect sense, structure, and guide energy systems toward a resilient future

Node suite – Engineering intelligence inside the substation

Within the Noedra ecosystem, Node delivers intelligence where substation complexity is highest.

The Node suite focuses on substation digitalization, integrating sensing, analytics, protection, automation, and control into a coordinated digital layer.

As part of this ecosystem, substation PAC engineering & Integration services ensure that digital substations are not only intelligent by design, but also securely engineered, interoperable, and operationally reliable - from concept through commissioning.

Connected with the other Noedra suites, Node enables substations to evolve into self-aware, future-ready operational systems.



Engineering digital substations without complexities

Renewables, electrification, and aging assets are reshaping power systems worldwide.

Operators must deliver projects faster, increase resilience, and integrate heterogeneous equipment - while remaining interoperable, cyber-secure, and cost-effective.

At the same time, substation protection, automation, and control (PAC) systems are becoming increasingly complex:

- Multi-vendor interoperability challenges.
- Migration from conventional wiring to digital architectures (process bus and station bus).
- IEC 61850 system modelling, testing, and validation.
- Rising cybersecurity and compliance requirements.

Siemens Energy's substation PAC engineering & Integration services address these challenges through a turnkey, accountable approach - combining deep technical expertise, global best practices, and Noedra's digital intelligence.

The result: simplified complexity, reliable integration, and future-ready PAC solutions that accelerate digital substation transformation.

Our offerings

PAC engineering & integration services deliver comprehensive protection, automation, and control solutions for both traditional and digital substations.

The scope spans the entire lifecycle - from planning and system design to detailed engineering, equipment supply, installation, testing, and commissioning - under one accountable partner.

Solutions can be delivered as:

- Full turnkey PAC systems, or;
- Partial scopes, such as protection-only or automation-only systems.

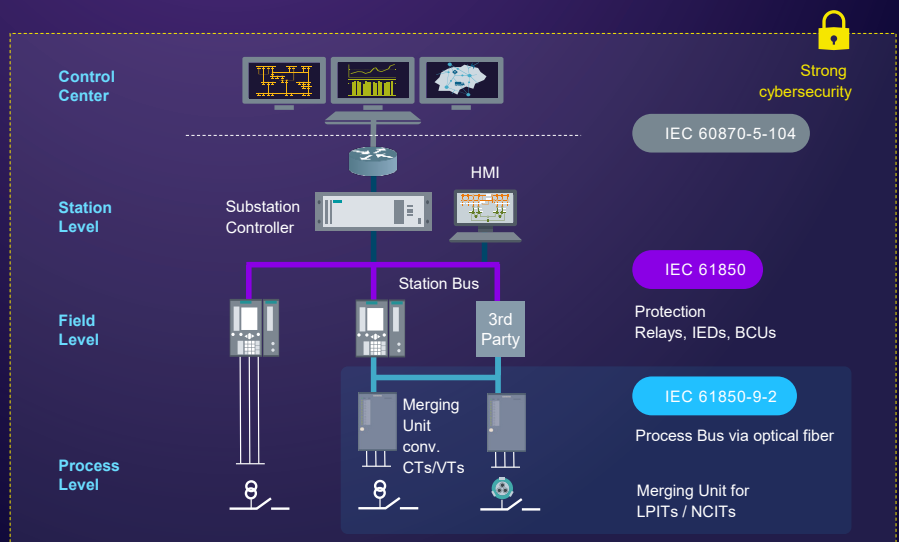
Flexibility ensures alignment with project-specific requirements.

The Noedra Atlas suite supports customers across the entire energy landscape, providing vendor-agnostic advisory services that span strategy, planning, and execution readiness.

Key features

- **Full AC PAC system design** of your substation including solutions based on IEC 61850 with network engineering, hardware selection, and process bus design.
- **End-to-end project execution and management** with system engineering, installation, on-site testing, and commissioning managed under one accountable partner for reliable delivery.
- **Lifecycle & modernization solutions** for facilitation of brownfield integration alongside legacy system interoperability, provision of migration strategies from traditional hardwired configurations to digital process bus architectures, and delivery of comprehensive long-term support and system advancement services.
- **Process bus implementation:** Process bus and station bus for digitally enabled substation automation in line with IEC 61580 standard.
- **OEM-agnostic hardware supply** including IEDs, protection relays, control units, HMIs, merging units, and substation controllers for maximum flexibility.
- **Full system integration** including cybersecurity as per relevant standards (e.g., IEC 62443, NERC CIP etc.) and connectivity solutions (e.g., gateway/RTU solutions for IEC 104/DNP3 telecontrol communication, protocol conversion and data concentration capabilities etc.) ensuring secure operations, compliance with global standards, and seamless integration with control centres and digital assets.

These capabilities deliver substations that are reliable, interoperable, and future-ready - combining proven engineering with embedded cybersecurity to support safe, efficient, and compliant operations.



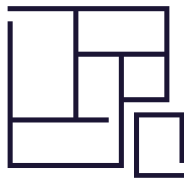


Benefits



Reliability

Proven engineering and integration for safe, stable operations.



Flexibility

Full turnkey or partial solutions to match your needs.



Cybersecurity

Cybersecurity-by-design for secure and compliant operations.



Interoperability

Vendor-neutral integration across multi-brand systems.



Future-ready

IEC 61850 digital substation capability built in.

Why Siemens Energy

Partnering with Siemens Energy means more than just choosing a technology provider. Our value goes far beyond technology - we bring vision, reliability, and partnership to every project

Proven expertise:

Benefit from decades of experience in power systems and grid modernization, ensuring reliable and forward-thinking solutions.

Global reach:

Leverage our worldwide presence and deep industry knowledge to address local requirements while meeting global standards.

Tailored solution:

Our teams collaborate closely with customers to deliver solutions customized to your unique operational needs.

Trusted partnership:

Rely on Siemens Energy as your advisor, dedicated to building long-term relationships and supporting your journey toward a reliable, secure, and sustainable energy future.

Continuous innovation:

Experience ongoing support and innovation, ensuring your organization stays ahead in a rapidly evolving energy landscape.

Engineer digital substations with confidence.

Simplify complexity and ensure reliable, secure PAC integration with Noedra Node.

Discover Siemens Energy's PAC engineering & integration services.



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