

**PSS®SINCAL**

## Plan reliable distribution networks with precision and speed

The dynamic electricity landscape is changing the very fundamentals of distribution grid planning, design, and operation. For example, the increasing integration of renewable energy resources, charging stations, and batteries, are requiring planners to consider new factors such as reverse power flow and unpredictable fluctuations. Many companies are using outdated tools or home-grown solutions which may no longer meet the industry needs or that require manual data maintenance efforts – affecting grid reliability! With the growing pressure to maximize grid utilization, expand the network and integrate alternative energy resources, distribution planners require a tool to streamline modeling and analysis of the continuously changing power grid.

For over 30 years, the PSS®SINCAL Platform has enabled engineers to tackle different challenges of the changing distribution grids including maintaining high reliability of supply and efficiently integrating Distributed Energy Resources. PSS®SINCAL provides distribution engineers with the powerful simulation tools required for the planning, design, and operation of power distribution networks. It can be used in balanced, unbalanced, radial, and meshed networks – from low to high voltage.

With the modular platform of PSS®SINCAL, power system planners and operation engineers are supported with their entire workflow from the initial data import and network modeling (considering past, current, and future conditions) to basic and extended calculations, all the way to extensive protection simulations and analysis as well as other methods in time and frequency domains.

**SIEMENS**

## Enhanced Digital Model

Intuitively create, adapt, and maintain your network model directly within the PSS®SINCAL windows like GUI. Data can be easily imported or exported with complimentary interfaces (i.e. Excel, CIM, etc.).

## Future-Proof Modularity

Flexible and scalable modular platform to ensure you can analyze smart grids, implement renewable integration strategies, and simulate future technologies.

## Fast and Robust Calculations

Run high-speed simulations and analyze different scenarios to ensure the maximum utilization of the current system as well as plan for reliable grid expansions.

## Easy Collaboration

Work with multiple users or teams on complex network models. The Multi-User Master Database enables you to work on a network model that is synchronized and distributed across different locations and workstations.

## Open Architecture

Eliminate silos in a rapidly changing energy landscape with easy data exchange and integration with various IT systems, such as Geographic Information Systems (GIS), SCADA, and Meter Data Management (MDM).

***VSD, a Slovakia DSO experienced a 20% increase in planning team efficiency with automated model creation from GIS***

# Tackle emerging distribution planning use cases

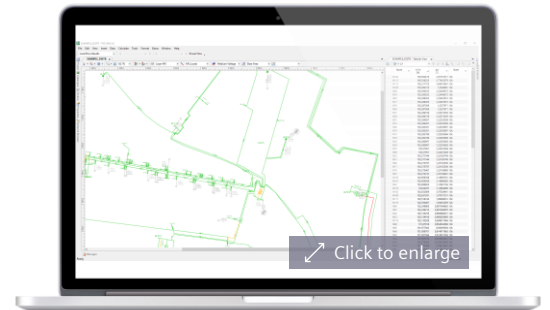


## Reliably plan new networks, grid expansions, and adaptations

With PSS®SINCAL, distribution planners can rely on powerful tools for network design, extensions, and adaptations through:

- Leveraging the fast and robust steady-state calculations focused on network utilization and voltage profile. (Power Flow/Load Flow and Short Circuit)
- Easily comparing various scenarios to validate expansions and adaptations optimized both technically and economically.
- Considering time-series behavior (loads and renewable generation) in planning studies to achieve the maximum utilization of assets.
- Simulating outage scenarios and identifying weak points to ensure grid reliability.

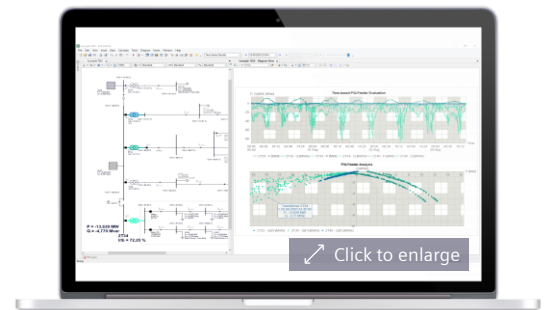
PSS®SINCAL supports you even further by providing a wide range of standard network components (such as line and cable libraries).



## Streamline the integration and assessment of renewable energy

As the number of grid interconnection requests rise, utilities and DER investors need tools that automate the viability of various interconnection proposals. PSS®SINCAL offers various features to address these challenges, such as:

- The Maximum Hosting Capacity (ICA) module enables users to automate various calculation functions, including load flow, short circuit analysis, protection checks with network adaptations, voltage fluctuations, and more.
- The Time-Series Data Interface (TSDI) module enables users to strategically plan their network and optimize asset management based on realistic scenarios derived from time-series data.
- Additional PSS®SINCAL features for DER integration include short circuit simulations with defined contributions of generators and converters, harmonic distortion limits according to standards, unbalanced RMS grid current, and Electromagnetic Transients (EMT) simulation.

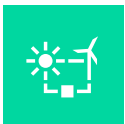




## Power system protection analysis

System operators, planners, and protection engineers face an ever-increasing landscape of challenges around power system protection. With PSS®SINCAL, protection engineers can tackle the complex field of protection with powerful simulations and visualizations by:

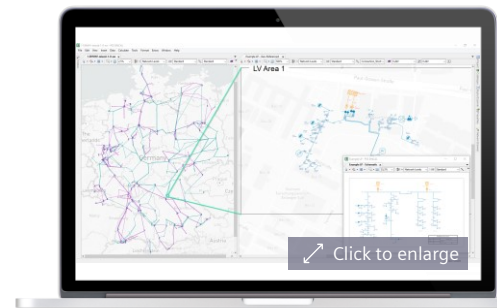
- Monitoring and studying the management of protection devices and their settings
- Providing interactive protection coordination with graphical documentation
- Verifying settings directly within the network model
- Facilitating protection performance assessments, including stepped-event fault clearance analysis, as well as dynamic fault sequence simulation
- Automating your entire network thermal destruction check and system-wide protection studies



## Integrated Transmission & Distribution System Analysis

The integration of DERs on the distribution level is driving reliability concerns on the transmission system. Traditionally, the transmission and distribution planning departments have planned models independently of each other while making assumptions to replicate the physical T&D systems.

With PSS®SINCAL, a planner can collectively study the overall impact on both systems and enhance future network planning with respect to the new renewable integration strategies and energy storage.



## Get Started: Request a free trial

The PSS®SINCAL team invites you to request a free trial to evaluate the capabilities. Visit [siemens.com/pss-sincal-trial](https://www.siemens.com/pss-sincal-trial) to request your trial today.

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