

Toolbox for advanced power system planning

PSS®SINCAL

Comprehensive visualization and evaluation functions

PSS®SINCAL is not only flexible as far as working on the network is concerned; the way you display input data and results on the screen can be flexible as well. This kind of work is supported by the program, giving you the possibility to visualize network calculation results in different ways.

Input data and results

Once network elements have been created, input data can be displayed in different ways and edited. This assures that you will not get confused when working with large amounts of data.

When the network calculations are finished, the results can be displayed in an easily readable form.

PSS®SINCAL can display input data and results in the following ways:

- directly in the network diagram
- in data-input forms
- in tabular view
- in diagrams (with a number of pre-defined diagram types)
- as reports

The legend in the network diagram can be assigned detailed parameters. This assures that the data needed will be displayed in the network diagram with the right parameters.

Coloring the network diagram

PSS®SINCAL has a function for coloring the network diagram with the help of prescribed selection criteria.

You can define the type, subtype and desired color for the evaluation. This lets you display the selected network elements in the Graphics Editor in color.

Use of filters

Another way to evaluate data displayed in the network diagram is to use filters. Filter functions allow you to color the network elements with the help of prescribed criteria.

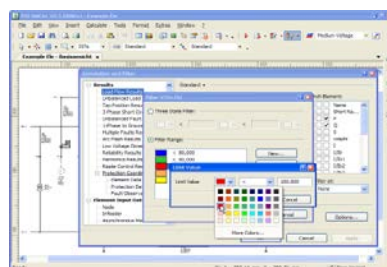


Figure 1: Filter setting for range evaluation

Filter settings are used to locate problems, like incorrect utilization or values that exceed limits, by displaying network elements in different colors based on the value of their physical quantities.

Intelligent network planning

PSS®SINCAL network planning tools have enhanced functions that provide optimum support for a wide range of network planning and evaluation tasks.

Feeder

This function lets you analyze the structure of an electrical network. You can determine all the feeders in the network that start from specially designated nodes and busbars. A feeder is a network supply area leaving a station. Feeders are determined in the following way:

- The algorithm for analyzing the network and determining the feeders starts.
- All feeders found in the network are displayed in a dialog box.
- These feeders can then be evaluated and visualized according to wide range of criteria.
- Feeders can be documented in a Microsoft® Excel® file.

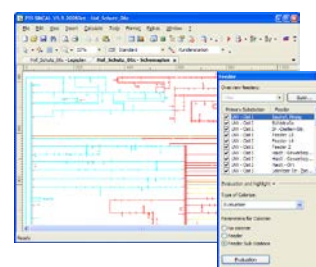


Figure 2: Feeder determination

Network elements for the feeders can also be highlighted graphically. This can be done either by storing or coloring them.

All information relevant for the planning can be called up for the feeders found (current load, transmission reserve, longest supply route, etc).

Calculating routes

PSS[®]SINCAL has a function for calculating the routes in the network. Basically, PSS[®]SINCAL distinguishes between simple routing for lines and enhanced routing for routes. Lines determine the best possible (i.e. shortest) route between a defined start and end node.

The enhanced routes option is a special optimization procedure. It determines the best possible course for a new line in accordance with an existing route structure. Various settings (installation cost, line length etc.) set parameters for the objective of the optimization procedure.

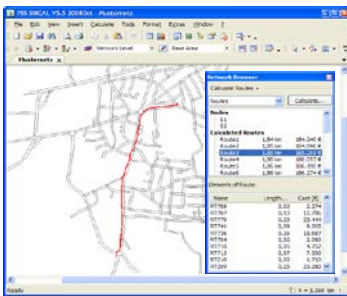


Figure 3: Determining the course of a route

Determining line data

This function lets you evaluate data for selected lines, letting you determine the impedance and charging power in electrical networks or pipe volume in pipe networks in a simple way.

Determining power data

This function evaluates the data of selected node elements, so you can easily determine supply sources and loads.

Determine polygon data

This function evaluates data from a selected graphic element group. This simplifies how you determine areas and load density.

Highlight network elements

This function makes the network elements stand out in the network diagram by highlighting them with a color. This is analogous to emphasizing text on paper with the help of a highlighter or colored marker.

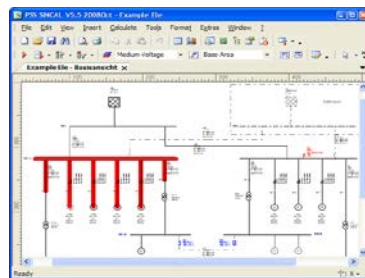


Figure 4: Highlighting a network element group

Network elements can be highlighted according to a wide range of criteria, including highlighted network elements, operating conditions, topological structure and feeders.

ISO areas

This tool lets you visualize various selectable parameters in an area graphically by coloring it (or, more precisely, with the use of color progression). PSS[®]SINCAL generates background graphics and displays these below the network.

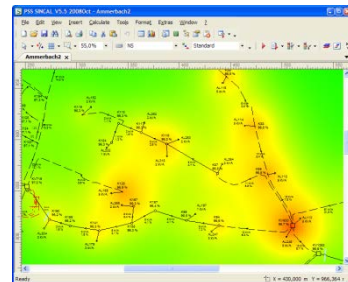


Figure 5: ISO area for load values

ISO areas let you select various different parameters to be displayed. PSS[®]SINCAL has a special dialog box for setting ISO area parameters. In this dialog box you can select the desired parameter and set a number of different control parameters and the desired shading.

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Energy Management Division
Freyeslebenstrasse 1
91058 Erlangen, Germany

For more information, please contact
power-technologies.energy@siemens.com

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