



PSCAD®

Power System Simulator

PSCAD/EMTDC is a general-purpose time domain simulation program for multi-phase power systems and control networks. It is mainly dedicated to the study of transients in power systems.



A full library of advanced components allows a user to precisely model interactions between electrical networks and loads in various configurations. A graphical user interface and numerous control tools make PSCAD a convenient and interactive tool for both analysis and design of any power system.

WEB LINKS

Transmission & Distribution network

Industrial distribution system

Rotating machines

Power converters

Embedded systems

Decentralised generation

Power quality

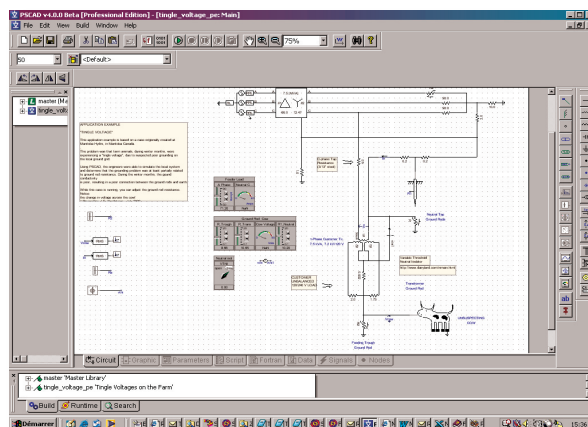
Protection relay

HVDC systems

Intuitive and visual design environment

PSCAD seamlessly integrated visual environment features all aspects of conducting a simulation, including circuit assembly, run-time control, analysis and reporting.

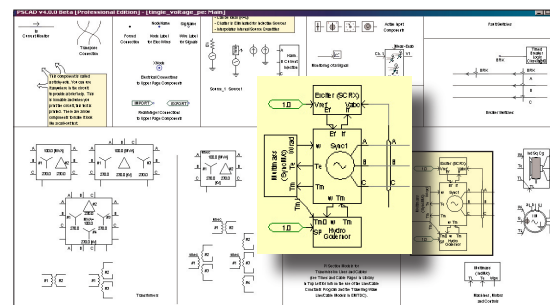
Users can easily interact with the components during the simulation because of the variety of control tools. The solution meters and the plotting traces are also visible and available during the simulation. Signals can be analysed in real time.



Extensive Components Library

PSCAD features a broad range of models for power system and power electronic studies such as:

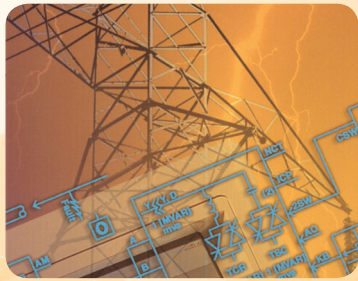
- Frequency dependent transmission lines and cables,
- Transformers (classical model with saturation/Umecc model)
- Various machines, (synchronous, asynchronous, DC)
- Various turbines (hydro, steam, wind),
- Converters & FACTS,
- Drive & control blocks,
- Relays.



Fast and Accurate

The time steps interpolation technique combines accuracy and quickness: it allows the simulation to precisely represent the commutations of breakers and switches in the electrical model, for any model's size, up to extremely large models.

PSCAD results are solved as instantaneous values, and can be converted to phasor magnitudes and angles via built-in transducers and measurement functions such as true-rms meters or FFT spectrum analysers. The PSCAD simulation tool can duplicate the response of a power system at any frequency, because the computation step chosen by the user can go from several nanoseconds to several seconds.

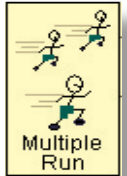


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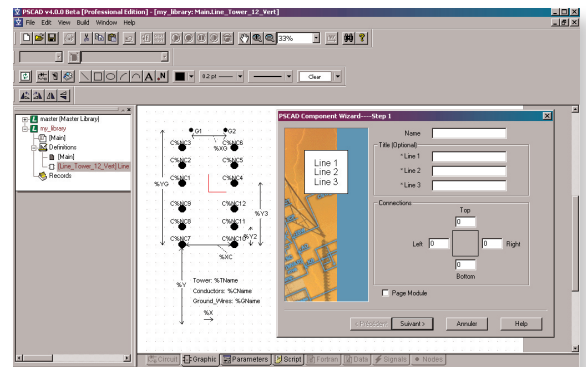
Optimisation

PSCAD features multi-run capabilities, enabling a user to run a case multiple times with a set of parameters changed each time in a predetermined manner. This facility makes optimisation an easy game as the optimum results (according to the criterion the users defines before) are highlighted by the software.



Customisation

Create custom components? PSCAD features the built-in Component Workshop, the tool used to create all the Master Library components. The look of the components and the data forms are all designed graphically. It allows each user to easily create their own component library.



Applications

PSCAD is appropriate for any application:

- Power lines & cables,
- Large non-linear industrial loads,
- Transformers with saturation,
- Power electronic systems & drives,
- Asymmetrical faults,
- FACTS/HVDC systems,
- Protection relay coordination,
- Arc furnace flicker,
- Distributed power generation,
- Rotating machines,
- Embedded systems...



References

A product of 25 years of Power Systems simulation research, PSCAD is the design tool of over 1000 commercial, industrial and research organisations worldwide, such as:

ABB, Alstom, Bombardier Transportation, Central Japan Railway Company, Cesi, Chubu Electric Power, EDF, Ericsson, General Electric, Hydro-Quebec, Indian Institute of Technology, Jeumont Industrie, New York Power Authority, Petrobras America Inc., PowerGrid Singapore, Siemens, Smit transformatoren, SwedPower, Tractebel, Va Tech, Vestas Wind system, and a wide range of university laboratories and teaching organisations.

PSCAD® is developed by HVDC Research Centre, Winnipeg, Canada.



WEB LINKS

User friendly graphical interface

Full library of advanced components

User models

Fast and accurate

Interactive control tools

Integration with Matlab

For more information, please contact:

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