

Software & Services



POWERSYS

Your Partner in Power Engineering

Software and Services



TRANSMISSION & DISTRIBUTION | POWER ELECTRONICS & DRIVES | MAGNETIC PRODUCTS | INDUSTRIAL PLANT | RENEWABLE ENERGY



www.powersys-solutions.com

ELECTRICAL POWER SYSTEM

POWERSYS proposes Global Solutions for your Business :
Engineering studies and software solutions



TRANSMISSION & DISTRIBUTION

Comprehensive portfolio of electrical transmission & distribution analysis.

Transmission & Industrial Power Plant analysis

- Power Flow
- Short circuit
- Protective device coordination
- Harmonics
- AC contingency
- Voltage stability
- Substation grounding
- Power cable ampacity
- Arc Flash Hazard

Distribution Systems analysis

- Geographic overlay
- Switching optimization
- Harmonics
- Reliability assesment
- Contingency analysis
- Secondary network
- Protective device coordination
- Substation grounding
- Power cable ampacity
- Arc Flash Hazard



POWER SYSTEMS TRANSIENTS

Studies of electrical network & power systems behaviour in time domain.

Renewable Energy generation systems (wind & solar) studies

- Equipment & control design
- Impact of grid connection

Transient stability studies

- Insulation coordination
- Lightning surges
- Switching surges
- Capacitor bank switching
- Series & shunt resonances
- Ferroresonance
- Subsynchronous resonance & shaft stresses

Power Quality studies

- Waveform harmonics
- Flickers
- Lightning impact
- Temporary overvoltages
- Motor starting

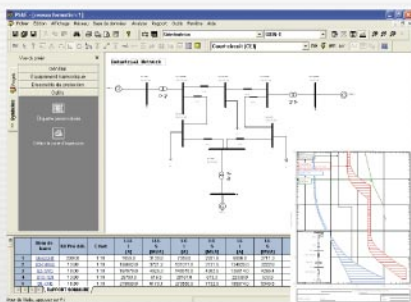
Grid Converters

- Control design
- Network connection



PSAF / CYMDIST / CYMTCC / CYMGRD / CYMCAP

The most advanced analysis tools for Transmission, Distribution and Industrial Power System



PSAF - Electrical Power Systems Analysis

Load Flow, Short Circuit, Motor starting, Harmonics, Transient stability, Arc Flash Hazard

CYMDIST - Electrical Distribution Analysis

Geographic Overlay, Switching Optimization, Reliability Assessment, Harmonic, Arc Flash Hazard, Secondary Network Analysis

CYMTCC - Protective Device Coordination

Over Current Protection, Protection Device Ratings, Device Library

CYMGRD - Substation Grounding

Ground Grid Design, RG and GPR computation, Step Voltage Analysis

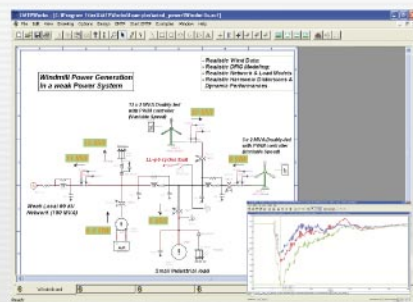
CYMCAP - Cables Ampacity Calculation

Steady State & Transient, Multiple Duck Bank, RTTR, CHOTE



EMTP-RV

Simulation & Analysis of Power Systems Transients



Network Modelling

Steady state initialization

Comprehensive library of network components including control, linear & non linear elements

Electrical machines & load Models

Cable modelling

Power electronics

Frequency scan

Harmonics

Statistical systematic analysis

Open architecture for customized modelling

POWER ELECTRONICS & ELECTROMECHANICAL SOLUTIONS



POWER ELECTRONICS & MOTOR DRIVES

➤ Power converters & drives design at a system level

Converters topologies design

- Power conversion structure validation
- Waveform analysis
- Component constraints characterization (Voltage, current)
- Filter calculation
- Loss calculation
- Thermal management

Power Supply Regulation design

- Regulation architecture validation (S & Z domain)
- Correctors design
- Dynamic performance validation
- Perturbation sensibility

Motor control design

- Drive control architecture validation
- Control algorithm design & implementation
- System (drive+load) dynamic performance validation



ELECTROMECHANICAL DESIGN

➤ Performances characterization & optimization of electromechanical equipment

Electrical Machine Design (IPM, SPM, SR, Spindle, Induction, Stepper motor, Alternator...)

- Basic characteristic analysis (N-T Analysis, Torque Ripple Analysis)
- Inductance Calculation, Efficiency Analysis
- Magnetization, Demagnetization, Eccentricity Analysis
- Loss Analysis (Iron loss, Eddy Current Analysis)
- Thermal Analysis
- Structural Analysis (Stress, Centrifugal Force, Sound Pressure Analysis)

Transformer / Reactor Design

- Basic Characteristic Analysis
- Structural Analysis (Sound Pressure)
- Loss Analysis
- Thermal Analysis

Busbar Design

- Current Distribution
- Inductance Calculation
- Thermal Analysis
- Structural Analysis

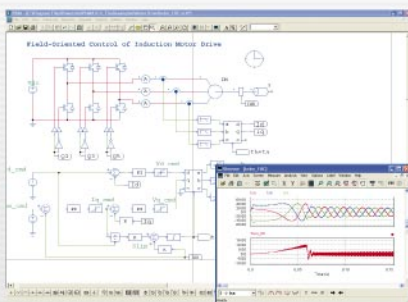
Induction Heating Analysis (Printer Roller, Induction Furnace, Gear, Cooking Heater, Drive shaft, Crankshaft...)

- Eddy Current Density Distribution
- Joule Loss Density Distribution
- Temperature Distribution and variation



PSIM Software

The ultimate simulation environment for power conversion & control



Built-in Power & Control Module
Motor Drive Library
Customizable examples
Flexible Control representation
Loss Calculation
Thermal Analysis of Switching Devices

Frequency response analysis
Analog & Digital Control Blocks
Link to Matlab/Simulink
Link to Finite Element software
Automatic Code Generation

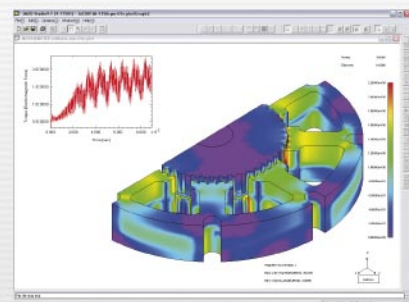
PSIM-JMAG co-simulation

Link your motor design to your circuit simulation !
Input the true behaviour of your motor in PSIM



JMAG Software

Simulation Technology for Electromechanical Design



Geometry Editor
CAD Link
Material Database
Manual Automatic & Adaptive Mesh
Skin Depth
Magnetic Analysis

Thermal Analysis
Structural Analysis
Link to control/circuit software
Real Time Simulator
Motor Design Tool
Distributed Analysis
Scripting Capabilities

● COMPANY PROFILE

POWERSYS is a consulting and software company providing global solutions of engineering software and services for industry in the field of Electrical & Electromechanical Power Systems.

By combination of the best relevant software on the market and our high skill staff of engineers we offer to local and global clients the most flexible solution for studies applicable to :

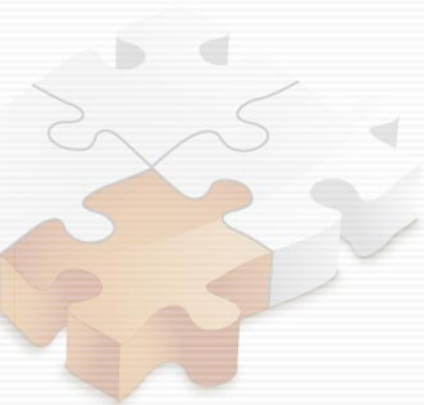
- electrical power systems and networks (transmission, distribution, generation, industrial plants)
- power electronics and drives
- electromagnetic and electromechanical equipment (motor, generator, transformer, actuator)

● TRAINING & TECHNICAL SUPPORT

We know the value of your time. That's why our goal is to give you the best support to save your time in handling our software or in case of problems you could meet in their use.

Our Support Team will help you online to come across first level difficulties in practical use of software. We also propose training sessions to help you moving forward with our software within the maximum efficiency.

Those sessions are customized to reach the best convenience (in your facilities, in our facilities) depending on your need (location, timing, number of users, level of users experience).



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