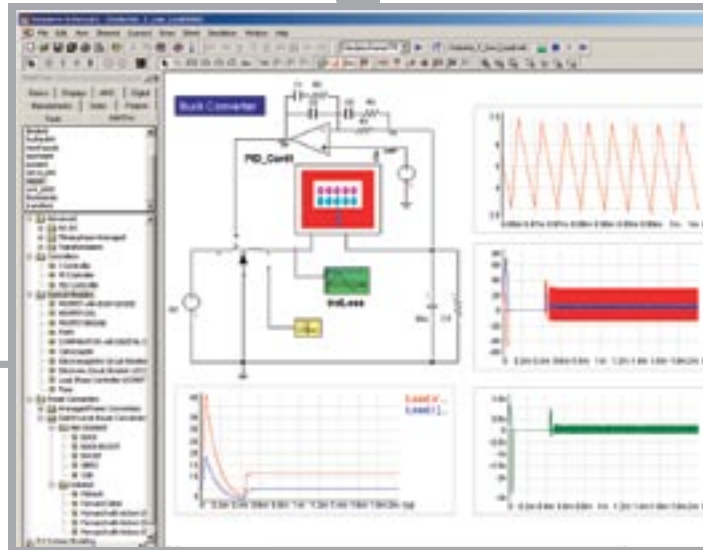


## SMPS MODEL LIBRARY

SIMPLORER's Switched Mode Power Supply (SMPS) Model Library provides a comprehensive set of predefined power-electronic circuit topologies and related control algorithms for the design of power-supply systems.



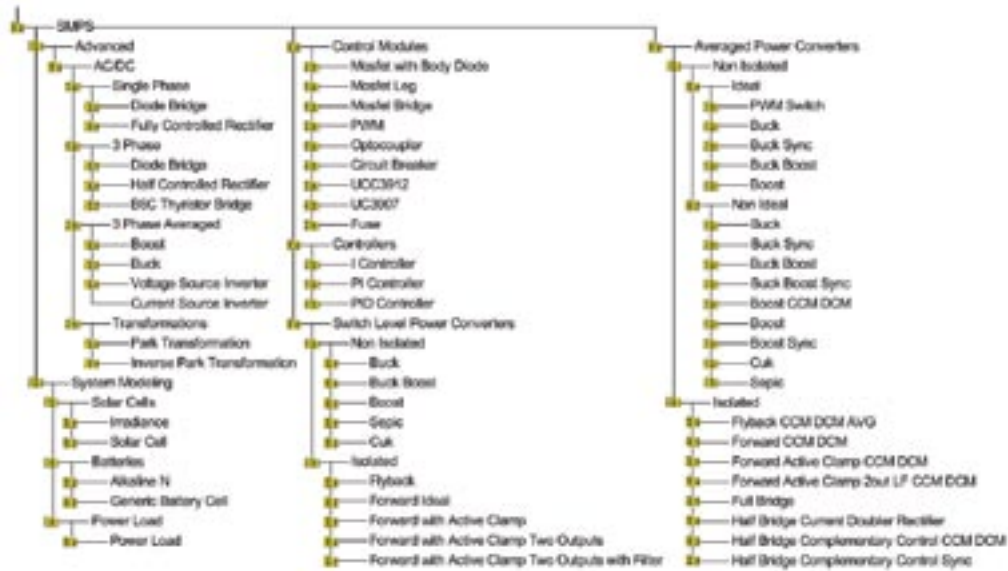
### SMPS Model Library Benefits

- Graphical modeling of power-supply systems is easy and intuitive
- Predefined macro models for frequently used DC/DC converter topologies save time and provide a jump-start for large simulation projects
- Common power-electronic control algorithms and control blocks, such as PWM, PID, etc., make the software easy to use
- Auxiliary elements, such as rectifiers, inverters, and system model energy-storage elements, etc., provide convenience
- Switching models provide accurate voltage and current waveform representation
- SMPS Library aids the design of control loops using the averaged models in combination with SIMPLORER's AC analysis capability

### SMPS Model Library Applications

- DC/DC Converter Design
- Power-Supply Design
- Power-Systems Design
- Power Quality
- Automotive
- Telecommunications
- Aerospace
- Medical Devices

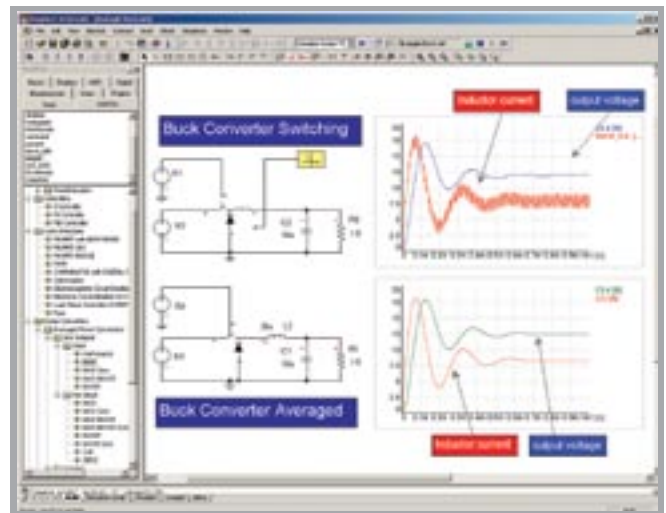
# SMPS Model Library Elements



- Averaged and switch-level models for common DC/DC power converter topologies
- Control modules for DC/DC power converters

## SMPS Model Library Example

The SMPS Model Library provides models with different accuracy levels. Users can choose between commonly used circuit topologies and either a switched or averaged model behavior. Switched models are typically used for the analysis of circuit behavior, switching losses, thermal implications and line connected EMC problems, such as harmonics or filter design. The tradeoff using switched models is computation speed. Performing a long-term transient analysis on a large automotive or aerospace system using switched models requires too much simulation time. Therefore, the averaged models provide a good alternative for system-oriented designs. They avoid individual switching cycles and compute the average voltage and current waveform of a circuit topology. This allows larger time steps and larger systems to be analyzed. All levels come with a number of predefined controllers and auxiliary components and topologies, such as rectifiers, PWM generators, and battery models.



*The SMPS Model Library contains both switching and averaged models for your convenience.*