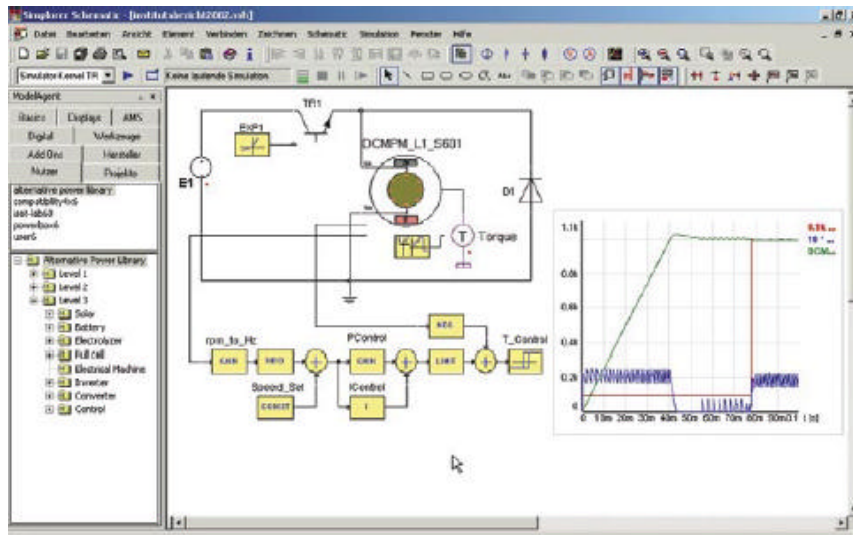


# ISET Alternative Power Library - Universal Model Library for the Simulation of Decentralised Power Supply Systems

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ISET Alternative Power Library: ISET's universal model library for the simulation of decentralized power supply systems will be world-wide available in spring 2003 via ANSOFT (USA)

## Abstract

As part of the ISET projects on modular PV hybrid systems technology, important progress has been made regarding the development of local electric utility grids. During this work, however, it became clear that suitable design tools capable of reducing the volume of engineering services are currently not available in the extent and scope required. A powerful, flexible and easy-to-use design and simulation system to simplify the development, planning and co-ordination of individual components can perceptibly reduce the engineering costs. Moreover, such a system can help to exploit existing possibilities for optimisation and avoid the wrong sizing of an operation, which would make it unprofitable. Powerful, flexible and easy-to-use design and simulation systems to simplify the development, planning and co-ordination of individual components can perceptibly reduce the engineering costs. Moreover, such systems can help to exploit existing possibilities for optimisation as well as avoiding the wrong sizing of an operation, which would make it unprofitable.

Therefore, as the basis for a suitable simulation system a model library is being developed during a project, which provides optimally adjusted computer models for components for decentralised power supply systems for dynamic simulation of various design tasks.

The adaptation of the models to the various tasks, from the investigation of transient processes to long-term observations, is achieved by the implementation of all modules in three different degrees of detail.

The ISET Alternative Power Library comprises not only generator models, such as photovoltaic or mechanical models, but also various storage, load and inverter components. The software can be used with various commercial simulation environments, such as Simulink or Saber. This is achieved by implementing the models in the programming language C++ and by applying modern object-oriented programming techniques. This methodology allows the simple separation of the physical description of the system from simulator-specific interface routines.

A new C++ - interface has been developed for accessibility of the model library to Simulink 6.0. The final work concentrates on the completion of this interface. Even after the end of the aid the model library is advanced continuously and expanded by new models. In-house, the components are already being deployed and tested in different projects for a while.

The "ISET Alternative Power Library for Simulink" will be available over ANSOFT CORPORATION in the beginning of 2003. The price will be about \$2900.