Model Management Module for PSS®E

Simple, effective, database model management, fully integrated into PSS®E

At a glance

The PSS®E Model Management Module increases your model accuracy and vastly reduces duplicated effort by:

- Providing a single source of truth for all planning model data

- Allowing you to populate a model database directly from your existing power flow, short circuit and dynamics models

- Providing a simple database and server set up, without requiring a complex IT burden

The challenge

It is very clear that the direction of the industry is towards more centralization of data for modeling, simulation, and analysis. Because so much of our data is shared across various modeling activities (powerflow, dynamics, short circuit, etc.) and across various departments (near-term planning, long-term planning, system protection, control room, etc.), this trend towards centralization makes sense. Consolidated data systems are less error-prone, and can save hundreds of hours per year in duplicated effort.

When it comes to PSS®E data, the major problem with this trend is that most PSS®E users are not, and do not wish to become, IT or database professionals. Engineers that run PSS®E want to focus on power systems engineering, which is challenging enough without having to deal with network, server or database issues. Also, users of PSS®E are very comfortable interacting with their data in PSS®E's interactive environment, where they can visualize the system with single-line diagrams, and manipulate the models directly in the diagrams. These engineers are not interested in managing their network data by editing raw database records.

Therefore, the challenge is to:

- Provide a simple-to-use, yet powerful platform that provides the engineer the vast benefits of database model management, without requiring any database or server know-how

- Allow the data and projects that will be stored for reuse in the database to be generated within PSS®E, where it is easy and intuitive to make these changes.

Our solution

PSS®E Model Management approaches the problem of database model management in a novel way. It is designed to let the engineer leverage the time savings and data accuracy of a model database, while allowing them to continue to use PSS®E to create the data, thus hiding almost all of the database and server considerations.
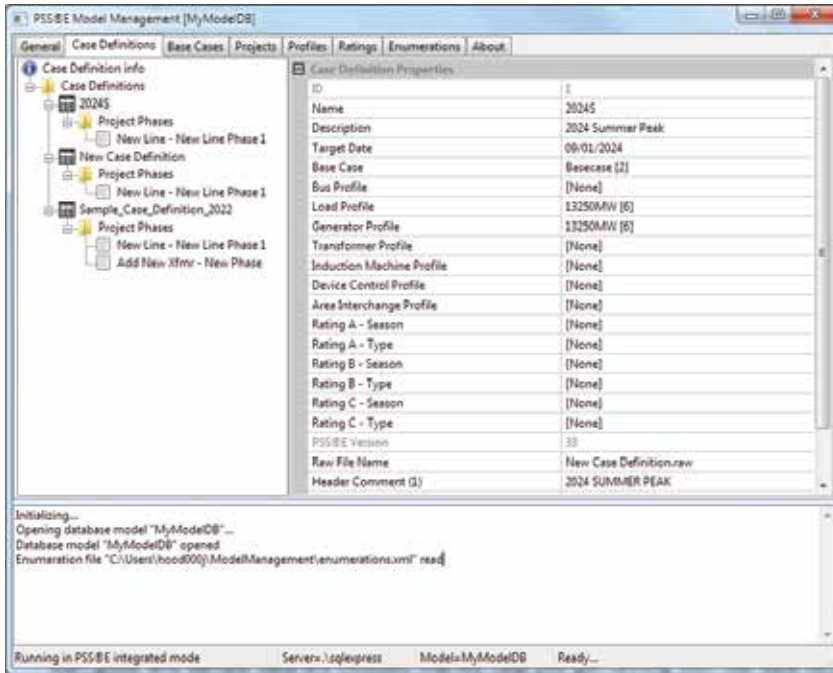
The main Model Management Module user interface. Simply select a pre-defined case definition, and a case will automatically be built from a combination of projects and generation/load profiles.

How it works

Getting data into PSS®E Model Management
PSS®E Model Management has been designed to make it as simple and intuitive as possible to get data into the database. The methods provided to populate your data are:

- Base topology information is obtained by uploading a master base case. This is the foundation upon which all incremental changes will be built.

- Generation, load, ratings, and device control profiles can be created in PSS®E (for example, by using the generation and load scaling functions), and then easily imported into the database for later reuse.

- Projects (new transformers, upgraded lines, new generators, etc.) are stored in the database through a smart recording process. You simply start "recording" the project changes in PSS®E, and the resulting actions are automatically stored in the database for future use.

Getting data out of PSS®E Model Management
Users of the Model Management Module should be able to transition away from loading basecase files directly in PSS®E (SAV or RAW files), and instead start loading Case Definitions from the Model Management Module. When the module is opened from PSS®E, A set of user-defined Case Definitions are shown that can be loaded into PSS®E. These Case Definitions consist of network topology, load and generation profiles, rating sets, project definitions, and other elements.

Prerequisites and compatibility
PSS®E Model Management works with both PSS®E version 33 and 34 (including full node-breaker substation support). The Python components that are included in the PSS®E installation are also required (the Python interpreter, wxPython, and the Python win32 libraries).

PSS®E Model Management requires the use of a SQL database to store the model data. The following databases are supported (Note that the SQL Server Express versions are available at no cost from Microsoft):

- **For a network:** Microsoft SQL Server 2008, 2008R2, or 2012

- **For workstations:** Microsoft SQL Server Express 2008, 2008R2, or 2012

How to get started
For further information or to purchase the Model Management Module for PSS®E, please contact Siemens PTI software sales at *pti-software-sales.ptd@siemens.com* or +1 518 395 5000.