Besides improved data management functionality, adds a high degree of flexibility to the study case administration.

management of model variations and operational scenarios combined with any time-state of the model. The independent Operational libraries organize operational scenarios and can be tools for managing time-stamped model variations.

stamping mechanisms of PowerFactory and the corresponding A PowerFactory V14 model may span a period of months or model changes are definitely history.

model building and data entry very easy. With Project Compare- and Merge tools, make concurrent Management, Project Versioning and Project Deriving along the same power system model. The introduction of Master Project PowerFactory V14 perfectly supports teams working on the

Some of the highlights S are:

• New and improved models
• Ultra-fast and accurate analysis algorithms
• Highly efficient data management

DIgSILENT GmbH
Company Profile

PowerFactory Version 14

DIgSILENT GmbH is a consulting and software company providing engineering services in the field of electrical power systems for transmission, distribution, generation and industrial plants.

DIgSILENT GmbH was founded in 1985 and is a fully independent privately owned company located in Gomaringen/Tübingen, Germany, where the company has been in operation since early 2002. DIgSILENT continued expansion by establishing offices in Australia, Italy and China, thereby facilitating improved service following the world-wide increased use of its software products and services. DIgSILENT has established a strong partner network in many countries such as Vietnam, Malaysia, UK, Spain, Switzerland, Colombia, Brazil, Peru, Argentina, India and Vietnam. DIgSILENT versions and software installations have been conducted in more than 150 countries.

DIgSILENT PowerFactory

DIgSILENT PowerFactory develops the leading integrated power system analysis software PowerFactory, which covers the full range of functionality from standard features to highly sophisticated and advanced applications including wind power, dispersed generation, real-time simulation and performance monitoring for system testing and supervision. For wind power applications, PowerFactory has become the power industry’s de-facto standard tool, due to PowerFactory’s models and algorithms providing accurate and repeatable results.

DIgSILENT StationWare is a reliable central monitoring and monitoring system that copes easily with the PowerFactory software. DIgSILENT StationWare stores and records all settings in a central database, allows modelling of relevant user scenarios, provides quick access to relay manuals, and interfaces with manufacturer specific relay settings software, and integrates with PowerFactory software, allowing for powerful and easy-to-use settings co-ordination studies.

DIgSILENT Consulting

DIgSILENT GmbH is staffed with experts of various disciplines relevant for performing consulting services, research activities, user training, adaptation programs and software developments. Highly specialized expertise is available in many fields of electrical engineering applicable to localized power markets and the latest developments in power generation technologies such as wind power and dispersed generation.

DIgSILENT has provided expert consulting services to several prominent wind grid integration studies.

PowerFactory Monitor is a flexible performance monitoring and monitoring system that can easily and efficiently with the special requirements for standard text interfaces, system performance supervision and the determination and supervision of connections characteristics. New Monitoring Systems installed in various grid locations can be integrated to a Wide-Area-Measurement System (WAMS). The PowerFactory Monitor fully integrates with the PowerFactory software.
**PowerFactory Applications**

**POWER TRANSMISSION**

PowerFactory offers a complete suite of functions for studying large interconnected power systems integrating new technologies for power generation and transmission such as wind generation, virtual power plants, HVDC/VSC and FACTS. It supports all types of phasing technologies, meshed or radial topologies. It is highly versatile and can be used for improving the security, stability and economics of complex power transmission systems.

Typically required functions include:
- Load flow/Contingency analysis
- Small signal and dynamic stability analysis
- Tools for investigating the impact of distributed generation for grid planning and operation.

**DISTIBUTED GENERATION**

PowerFactory is ideal for grid studies for distributed generation and virtual power plants, HVDC/VSC or FACTS. PowerFactory offers a wide range of features such as multi-phase load flow analysis, small signal stability analysis, also for very large networks, with advanced solution algorithms, providing the analyst with the power of a highly modern analysis tool featuring dynamic simulation functions and stability analysis. Full support is available for developing and analyzing the impact of virtual power plants and new control techniques on distribution networks.

Other relevant functions include:
- Motor starting, voltage sag analysis and parametric excitation
- Steady-state and dynamic analysis
- Voltage drop calculation and voltage unbalance
- Stability analysis and electromagnetic transients

**INDUSTRIAL SYSTEMS**

PowerFactory suppliesifiers, pumps, valves, car factories or offshore plants with high power quality requirements. It benefits from high performance PowerFactory load flow algorithms, short circuit calculation features, grid modeling, harmonic analysis and fiber design options.

Other relevant functions include:
- Motor starting, voltage sag analysis and parametric excitation
- Steady-state and dynamic analysis
- Voltage drop calculation and voltage unbalance
- Stability analysis and electromagnetic transients

**WIND GENERATION**

Complex studies for the integration of wind generation into distribution and transmission networks are becoming increasingly important. PowerFactory, the de facto standard in wind generation modeling, combines extensive modeling capabilities with advanced solution algorithms, providing the analyst with tools to maximize the full range of studies required for grid connection and grid impact analysis. The modeling capabilities of PowerFactory allow the inclusion of complex control dynamics, new generation technologies, blade control and wind turbines of any kind as well as advanced load models.

Detailed wind turbine models:
- **WTS models:**
  - Simplified rotor models
  - Full-bladed rotor models
  - Composite blade/rotor models
- **Controller models:**
  - Pitch control
  - Inverter control
  - Load following control
- **Environmental models:**
  - Wind pipe models
  - Turbulence models
- **Operational models:**
  - Lifetime & load models
  - Failure & repair models

PowerFactory is the ideal tool for studying the grid integration of new generation-technologies.