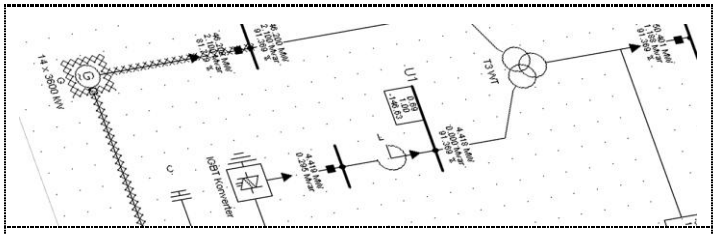

DIgSILENT Technical Documentation

PowerFactory V14.1

Release Notes

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Release Notes

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Revision History

Version	Release	Description
14.1.4	08.05.2012	Release Notes for PowerFactory Version 14.1.4
14.1.3	06.12.2011	Release Notes for PowerFactory Version 14.1.3
14.1.2	12.08.2011	Release Notes for PowerFactory Version 14.1.2

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1 PowerFactory V14.1.4

1.1 Minor Enhancements/Fixes

1.1.1 Load Flow/Optimization/Network Reduction

Description	Solution Note	ID
Generator and load mismatch should be calculated for areas and zones.	The following new calculation quantities are now available for zones and areas: - GenPmism in MW: Difference of Actual and Dispatched Generation, Active Power - LoadPmism in MW: Difference of Actual Consumption and Load Demand, Active Power	#7690
Voltage Source: Unbalanced load flow fails if two Voltage Sources are connected to the same bus.	Problem solved.	#7588 DIG1201
Under special conditions the load does not converge (outer loop) when the load flow is calculated with distributed slack via generation and the "Active Power Limit" option is enabled.	Problem solved.	#7808
Network Reduction: PowerFactory crashes if a short-circuit line in a tower is outside the boundary.	Problem solved.	#7469 DIG1338
Network Reduction: Calculation fails if several boundary nodes are connected via switches with impedances.	Problem solved.	#7585 DIG1692
Network Reduction: Issue error message if the reduction splits the secondary controller.	Problem solved. An error message is now printed.	#7621

1.1.2 Contingency Analysis

Description	Solution Note	ID
Performance optimization for Contingency Comparison Tool.	Performance improved.	#7718 DIG962
Comparison of contingencies using "Comparison On/Off" button does not work for Multiple-Time-Phase calculation.	Problem solved.	#7419 DIG962
Post Fault Actions: Generator Event (EvtGen) does not work for Static Generators.	Problem solved. Generator event now also works for Static Generators.	#7753 DIG1393
If the contingency is defined without a fault case and the outaged element will split the network into two areas with potential slacks, the contingency calculation will not converge.	Problem solved.	#7620 DIG1911
Switch Events defined on Non-Switch elements shall be supported.	Switch events defined e.g. for a cubicle or a line … now supported for the contingency calculation.	#7589
Multiple-Time-Phase Contingency Analysis: Calculation shall be started from previous time phase.	Performance and convergence behaviour improved. The time phase now starts from previous time phase calculation.	#7622
Single-Time-Phase Contingency Analysis: Depending on the sequence of the events in the database, some events are not executed and the simulation stops (if not sorted according to their event time).	Problem solved. The events are now sorted according to their event time.	#7583
Parallel Contingency: Slave process crashes for occupied ports.	Problem solved.	#7735
Parallel Time Sweep: Empty result if total hours cannot be equally distributed among slaves.	Problem solved.	#7828

Description	Solution Note	ID
Effectiveness calculation causes PowerFactory crash with duplicate generators.	Problem solved.	#7801 DIG2533
Effectiveness calculation causes PowerFactory crash with pure DC element.	Problem solved.	#7803 DIG2537
Summary quantities "max_v" and "min_v" missing for DC terminals.	Problem solved.	#7565
Post Processing: Wrong results for open breakers during contingency analysis.	Problem solved.	#7591
Contingency Analysis Command: Edit Load Flow button doesn't block load flow command.	Problem solved.	#7440

1.1.3 Short-circuit

Description	Solution Note	ID
Multiple Short-Circuit: PowerFactory crashes with a set of short-circuit cases opening / closing the same breaker and switching from 3-phase to 1-phase short-circuit.	Problem solved.	#7413 DIG978
VDE/IEC (for non-meshed short-circuit): Motor contributions are not considered for the thermal current calculation.	Problem solved.	#7378 DIG990
Line Coupling/Cable System: Short-circuit failed with 0% fault distance with mutually coupled lines (complete method).	Problem solved.	#7705 DIG537 DIG2161

Description	Solution Note	ID
External Grid: "Complete" Short-Circuit, "Calculate: Min. Short-Circuit Currents": Should behave similar to IEC60909 version.	External Grid: For min. short-circuit calculation, complete method the "Min. Values" are now automatically used (e.g. Sk"(min), R/X Ratio (min.) …).	#7723 DIG2233
ANSI: Momentary/Interrupting current is not correctly calculated if method is set to R/X calculation "complex".	Problem solved.	#7437
Inconsistent handling of fault impedance during R/X calculation.	The fault impedance is now ignored for all short-circuit methods during R/X (X/R) calculation.	#7297
IEC61363: PowerFactory crashes when unbalanced lines, terminals (1phase/2phase) are in the network.	Problem solved.	#7761

1.1.4 Simulation/Modal Analysis

Description	Solution Note	ID
EMT Simulation stops without error message if a PLL is not connected.	Problem solved.	#7441
PowerFactory crashes when running balanced RMS simulation and opens a 1phase breaker.	Problem solved.	#7352
DFIG Machine (with 2 AC connections): Unbalanced RMS simulation not correct when the nominal voltage of the second AC terminal differs from "Rated Slip Ring Voltage".	Problem solved.	#7529 DIG1610
DSL: PowerFactory crashes when encrypted code exceeds the maximum code length.	Problem solved.	#7353 #7832

Description	Solution Note	ID
Eigenvalue calculation: Include option for random initialization of Arnoldi iteration.	New option "Initialization of Arnoldi Iteration": - use random start vector - use standard unit vector(s) (default)	#7496 DIG945
Modal Analysis: PowerFactory crashes during activation if the modal analysis result file is corrupted.	Problem solved.	#7720 DIG2209

1.1.5 Harmonic Analysis

Description	Solution Note	ID
Inclusion of summation law exponents according to BDEW-guideline.	The "Alpha Exponents" can now be set according to BDEW 2008: - Line commutated converters - VSC, switching frequency < 1 kHz - VSC, switching frequency >= 1 kHz	#7767
Voltage Source: Inter-harmonics and even order harmonics are ignored in balanced harmonic load flow.	Balanced Harmonic Load Flow: - Inter-harmonics are now considered, using u1, u1, Ang. - warning message for zero sequence harmonics (... will be ignored) - even order harmonics are now considered, using u1, u1, Ang., except zero sequence harmonic orders (e.g. 12, 18, …)	#7504 DIG654
Harmonics (Flicker) calculation fails if a static generator is connected to an ABC-N terminal.	Problem solved.	#7431
Harmonic Load Flow: Incorrect results for distributed parameter lines.	Problem solved.	#7779 DIG2421
AC Voltage Source: Warning messages not output correctly.	Problem solved. Error message is now printed, e.g. "For positive sequence harmonic order 7, negative and zero sequence voltage magnitudes and phase angles will be ignored."	#7819

Description	Solution Note	ID
Voltage Source with two connections (ElmVacbi): Susceptance Y, G and B quantities are not correctly calculated.	Problem solved.	#7347
AC Voltage Source, "Ideal RC-Source" is not correctly working if more than on harmonic voltage is defined.	Problem solved.	#7737

1.1.6 Reliability Assessment

Description	Solution Note	ID
Protection failures are not considered.	Problem solved.	#7614

1.1.7 Protection Models

Description	Solution Note	ID
Performance improvements for protection diagrams.	Performance improved for large relay models in the time-over-current, time-distance and R-X diagram.	#7311
Time-distance diagram is not correctly working if a relay contains a sub-relay.	Problem solved.	#7338
The "Total Tripping Time" (Ttotal) quantity is not correctly calculated if the unit is inside a sub-relay and the timer is not directly connected.	Problem solved.	#7333
Time-overcurrent unit (RelToc): Incorrect tripping times in RMS simulation (in special cases).	Problem solved.	#7703 DIG1985

Description	Solution Note	ID
AEG/Alstom Starting Unit (RelFdetaegalst): U/I starting and earth fault detection do not work properly for product versions without double thresholds.	Problem solved.	#7787
The AEG/Alstom starting element doesn't work properly when the "Underimpedance" mode is used.	Problem solved.	#7375 DIG926
Alstom Starting Unit (RelFdetalst): Impedance characteristic toggles infinitely during RMS simulation.	Problem solved.	#7668
The "timer" button in the "Mho" dialog is not active when a timer is connected via a logic block, e.g. for the "GE UR L90" relay model.	Problem solved.	#7307
The ABB REL 511 starting element: "oo" for the time delay "tPP" or "tPE" is not working.	Problem solved.	#7708
For the "ABB REF 615" model the CT ratio is not correctly determined for the earth elements.	Problem solved.	#7758 DIG1700
The U/I/phi starting parameters are not accessible in the Siemens Starting Unit Type (TypFdetsie) when the product number is set to 513.	Problem solved.	#7759
The starting block of the Siemens 7SA513 model contains the "Prog.ZA" parameter, but is not present in the relay.	Problem solved.	#7760

1.1.8 Single Line Graphic

Description	Solution Note	ID
Single Line Title: Macros required for displaying parameter from active study case.	The following pre-defined macros are possible to access parameters from the active study case: - Name of Study Case - Name of Active Scenario - Name of Recording Expansion Stage - Name of Project - Study Date and Time - Study Date - Access to Study Case description filed (line 1-5)	#7360
Surge arrester cannot be redrawn or reconnected.	Problem solved.	#7321
Graphical connections get lost in permanent diagram when deleting terminals and a Variation is active.	Problem solved.	#7581
Permanent Diagram: A new graphic object is created unnecessarily after disconnecting a line which is connected to the same terminal on both sides.	Problem solved.	#7332
Problem with Illustrating Rectangle in background.	Problem solved. After reconnecting an element the illustrating rectangle is now always in the background.	#7335
Problems with deletion of objects in permanent diagrams and a Variation is active.	Problem solved.	#7403
Under special circumstances PowerFactory crashes after deleting inactive objects in the permanent diagram.	Problem solved.	#7404
Under special circumstances PowerFactory crashes after "Show Graphic" on multiple objects.	Problem solved.	#7423 DIG1093

Description	Solution Note	ID
Inactive objects in freeze mode must not be considered with right mouse click.	Problem solved.	#7426
Connecting Branch from template to substation not possible.	Problem solved.	#7494
Inactive connection line drawn incorrectly after "Paste graphic only" and "Rebuild".	Problem solved.	#7712
Define Template Problem: When creating a template by marking (e.g. a terminal and a local text box referencing that terminal) two terminals are created in the template folder.	Problem solved.	#7580
The "Adjacent Elements" mode ("Draw Existing Network Elements") should also list elements which are directly connected to busbars (e.g. via Switch).	Problem solved.	#7601
Apply layer visibility to all graphics not working for system layers.	Problem solved.	#7582

1.1.9 Graphical User Interface / Dialog

Description	Solution Note	ID
Definition of a characteristic for Interchange Schedule in a Grid not possible.	It is now possible to define a characteristic for the "Interchange Schedule" of a grid.	#7610 DIG1944
Definition of a new path does not work if a Branch (ElmBranch) object is selected.	Problem solved.	#7752 DIG2058
Asyn./Synchr. Machine/Load: "Active Power" (pgini,plini) is inactive in flexible data but active on load flow page.	Problem solved.	#7629 DIG997
Branch: Incorrect zero-sequence impedance values when a series reactor and a switch are in parallel.	Problem solved.	#7648 DIG1178
Branch: Incorrect zero-sequence impedance values when a series reactor or capacitor is part of a branch.	Problem solved.	#7651
Data Manager: PowerFactory crashes when clicking on an "unused" area in the "Detail Mode Class Select" window.	Problem solved.	#7390 DIG1054
Under special circumstances PowerFactory crashes when right-clicking on a composite model.	Problem solved.	#7727 DIG2260
Link to DIgSILENT HelpDesk Portal	Menu: "Help" => "About PowerFactory" now shows the link to the DIgSILENT customer portal.	#7533

1.1.10 Merge Tool

Description	Solution Note	ID
Objects loose references when merging from derived to base project.	Problem solved.	#7834
Reports too many relevant changes in hidden objects.	Problem solved.	#7838

1.1.11 DPL

Description	Solution Note	ID
DPL extension for MSO should be part of PF standard installation.	Various new DPL functions for Microsoft Office access: - MS Access - MS Excel More details see help file "digdplfunmso.chm" in the PowerFactory installation directory.	#7555
New routine for http get requests required.	New DPL function to get HTTP requests: *int HttpGet(string url, string contents, string header, string errors)* url (string): url to fetch contents (string): received http content header (string): received http headers errors (string): descriptive error text if available or: *int HttpGet(string url, object contents, object header, string errors)* url (string): url to fetch contents (IntDplvec): received http content header (IntDplvec): received http headers errors (string): descriptive error text if available	#7631
Matrix (IntMat) cannot be resized to 0 rows and n columns.	Problem solved.	#7781

1.1.12 Reports

Description	Solution Note	ID
Tabular Reporting: On Loading or Voltage violations per case, the Base Case results are no longer visible once a contingency case has been viewed.	Problem solved.	#7693 DIG2088
DPL functions for using table reports from DPL without GUI required.	New DPL functions form Table Report: - "*ComTablereport.ClearAll()*": used to clear all data set in a table report. - "*ComTablereport.ExportToHTML()*" used to write the report to a file.	#7768

1.1.13 Converter / Import / Export / DGS / Engine

Description	Solution Note	ID
PSS/E Import: - Converter is crashing when an area index is > 999 - A Station Controller is not created if the remote control bus is bus type 2 (a generator bus) - Message: Model 'CIMTR1' on bus 'xxx' not supported not correct. - Zero-sequence data must be ignored for breaker/switches. - Load flow not converging when two voltage controlled buses are connected via switch/breaker => a Station Controller must be created.	Problems solved.	#7295 #7604

Description	Solution Note	ID
PSS/E Export: - Set machine/motor/external grid and load to "out of service" if no calculation model exists. - Wrong voltage at busbar (VM) set if only one "out of service" generator or a motor is connected. - In special cases the zero-sequence generator data are incorrectly set to #INF (e.g. for SVS) -XLINZ, RLINZ must be set to X1,R1 for ElmSind/ElmScap - Mapping string for "avr_ST5B" model not correct.	Problems solved. Model string corrected (Kc instead of KC).	#7340 DIG1545 DIG2557 #7763
PSS/U import is crashing if a load is connected on an unsupplied node.	Problem solved.	#7732 DIG2235
UCTE import: - New option to ignore a complete country. - Susceptance not imported equivalent lines (ElmZpu). - Symmetrical Phase Shifters with -90deg are not correctly imported.	Additional Parameters field: e.g. /ignCountry=NL to ignore the complete country "NL". Problem solved. Problem solved.	#7659 #7372 #7624

Description	Solution Note	ID
DVG Import various improvements.	Improvements: - creation of sides (for STANDORT) and substations (for the corresponding voltage level). - "Netzgruppen" are converted to Zones when option "/n2z" is enabled -Naming improved for 2-terminal elements (e.g. lines, transformers …) - 2-terminal elements are stored according to different criteria: a) Lines and series branches in the grid. b) Couplers and series reactors in the common grid/site/substation. c) Transformers in the common grid/site. - "Kupplung" are always converted to "ElmCoup" elements only. - Default length of lines/circuits is changed to 1m. - "Netzgruppe" P inter-change is now stored in the respective Grid or Zone	#7298
ENTSOE 2009 Export: - Problems for PV machines. - 'LoadResponse' missing for equivalent border node loads. - Problem with exporting Extended Ward Equivalents. - Export produces duplicate IDs and invalid names. - Import/Export of "FuelType" object. - Various minor improvements	Problems solved.	 #7775 DIG2438 #7739 DIG2055 #7545 DIG1575 #7454 DIG1246 #7826 #7286

Description	Solution Note	ID
CIM 2010: Calculation of "usetp" for station controllers should be based on "SvVoltage" values.	Problem solved.	#7506

1.1.14 Miscellaneous

Description	Solution Note	ID
Scenario is reported incomplete because of not considering grid exclusions.	Problem solved.	#7791 DIG2570
Hidden objects (e.g. root characteristics) are not removed when variation object is deleted.	Problem solved.	#7742 DIG1848
Under special circumstances PowerFactory is crashing during out of service detection of composite models. ☐	Problem solved.	#7600 DIG1919
Feeder topology not correct when splitting a line and a variation is activated.	Problem solved.	#7577
Characteristic from File (ChaVecfile) is not correctly updated after switching variations.	Problem solved.	#7699 DIG2120
Foreign Key: Keys modified in derived project not handled correctly.	Problem solved.	#7698
Derived project disappears.	Problem solved.	#7750 DIG1917
Memory usage is too high when activating a large project.	Problem solved.	#7677 DIG1402
Update of DGS documentation.	DGS documentation updated.	#7382

Description	Solution Note	ID
API: It should be possible to start PowerFactory via API from a different directory.	Problem solved.	#7570
API: DestroyApiInstance() leads to memory exception.	Problem solved.	#7602
Update of installation manual.	Installation manual updated.	#7536
Update Quick Installation Guide.	Quick installation guide updated.	#7538
German license agreement text within German setup.	German license agreement text updated.	#5272