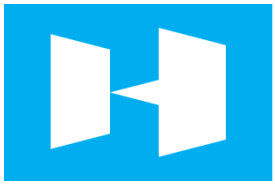
# RELEASE NOTES



HYPERSIM

*Latest Update:* *March 9, 2018*

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# HYPERSIM

## Version 6.1.3.xxx

- Added warning message on enabling the precision valve in switches and controllers (HYTT-2022)
- Added Control Exciters: IEEE DC2A, IEEE DC3A, IEEE ST2A; Control Governors: IEEE TGOV2; Control Stabilizers: IEEE PSS2B, IEEE PSS3B to standard libraries (HY-1863)
- Added real-time simulation mode to the Windows platform (HY-1815)
- Added Benchmarks example models (HYTT-1981)
- Added capability to configure the IP address used by the engine when using the continuous acquisition mode in ScopeView (HY-1799)
- Fixed ScopeView data source not appearing when ScopeView is started at the same time as the simulation (HY-1386)
- Fixed issue with the data logger when checking for remaining disk space on large partitions (HYTT-2104)

- Fixed wrong example model default code directory (HYTT-2111)
- Fixed Posx.x% signals from "Network Transformers - 3-winding w/ sat + tap + dec" unavailable in ScopeView (HYTT-1763)
- Fixed segfault of HyServer when incorrect parameter is set in hyServMain.cfg (HYTT-2019)
- Fixed Time constant filter inversion of parameters (vd_tf2 and id_tf1) for Network Switches LCC devices (HYTT-1922)
- Fixed code generation on target for Protection Relays and Machine Controls (HYTT-2169)
- Increased limits on Vmin value in "Network Loads - Dynamic load" (HYTT-2044)

## Version 6.1.2.672

- Added a preference to disable transceiver validation during Analyze (HYTT-1940)
- Added support for MATLAB R2017b (HY-1817)
- Added C37.118 master to list of drivers that appear in the I/O configuration tool by default (HYTT-1926)
- Added continuous acquisition mode support in real-time (HY-1380)
- Added capability to run wideband line code in 2 tasks to reduce delay (previously only 3 tasks where possible) (HYTT-1810)
- Added ability to view the figures in the load flow solution report with 3, 6 or 9 decimal places (HY-1786)
- Added current magnitude and angle for sources and loads to the load flow solution report (HY-1819)
- Added capability to set a negative inductance value in transformers (HYTT-1974)
- Improved user interface in load flow window, including presentation of results in the text area (HY-741, HY-1821, HY-1822, HY-1823)
- Improved timeout problem with a large number of I/O boards (HYTT-1913, HYTT-1969)
- Improved ScopeView API example (HYTT-1675)
- Improved Hyperlink documentation for data type error in code generation and support of tunable variables (HY-1606, HYTT-1221)
- Fixed missing file errors that can appear during compilation by upgrading msys to msys2 (HYTT-1803, HYTT-491)
- Fixed Analyze issue with large circuits
- Fixed timeout issue with load flow
- Fixed inaccurate results when adding I/O Output sensors to electrical elements (HYTT-1805)

- Fixed issues when reading file paths with characters that are not in the default character set (HY-1827)
- Fixed I/O configuration tool issues when a path contains a special character (e.g. with accent) (HY-1827)
- Fixed issue with automatic transceiver and "Synch. machine (thermal)" (HYTT-1927)
- Fixed engine crash when there is an empty subcircuit in ECF (HYTT-1872)
- Fixed Tasks Manager error when doing a manual mapping with I/O (HYTT-1860)
- Fixed issue with data logging signals on subcircuits (HYTT-1798)
- Fixed issue with ScopeView when opening an OPREC file more than once (HYTT-1798)
- Fixed issue with data logging when model name contains a dot (HYTT-1706)
- Fixed data logging file length when trigger's "Record count" is set to 0 (HYTT-1649)
- Fixed drivers end of asynchronous process when license is invalid (HYTT-1537)
- Fixed voltage and current sources frequency value when selecting PU option (HYTT-1832)
- Fixed data logging time step issue when using multiple signal groups (HYTT-1909)
- Fixed engine crash when entering a wrong IP address in networkConfig.opal (HYTT-1995)
- Fixed masks that were higher than 768 pixels for lower resolution laptops (HYTT-1991)
- Fixed EDD import error for the following transformers: "Zigzag, phase-shifting", "3-winding, 1-ph w/sat", "2-winding, 1-ph w/sat" (HYTT-1982)
- Fixed output signals not equals to 0 on DA port when there's no signal connected from model. (HY-1837)

- Fixed protection relay "81 - Frequency" code generation issue on real-time architecture (HYTT-2014)
- Fixed "Wideband line/cable" loss of engine connection when loading a new .dat file (HYTT-1857)
- Fixed "Wideband line/cable" issue with short lines running on 2 tasks (HYTT-1996)
- Fixed issue preventing connection of a breaker status directly to an IEC 60870-5-104 single point output (DRVTT-226)
- Decreased simulation process priority when executing on windows target to free some core processing for other processes (HYTT-1885)
- C37.118 master: Added support for configuration via GUI (DRV-2108)
- C37.118 master: Added example model (DRV-2237)
- C37.118 slave: Added example model (DRV-2237)
- IEC 60870-5-104 slave: Added example model (DRV-2237)
- IEC 61850: Added example model (DRV-2237)
- Synchronization: Added example model (DRV-2237)
- Synchronization: Added support for CentOS 64-bit (DRV-2188)

## Version 6.1.1.647

- Added a button in ScopeView to show/hide the data source parameters panel and added minor UI enhancements (HYTT-1731)
- Added possibility to add and edit expressions on combobox and radiobutton widgets in forms (HYTT-1820)
- Added a new and more efficient task mapper, configurable through the Tasks Manager (HY-1718)
- Added button in the Windows activation tool to delete a license backup file (HY-1653)
- Added button in Target Options window to restart services on the target (HY-1667)
- Added "With I/O" and "Without I/O" filters in Sensors form and Selected Summary window (HYTT-1623)
- Added option to enable/disable automatic transceiver insertion in Simulation Options (HY-1724)
- Added Control Exciters: IEEE ST1A, IEEE AC1A, IEEE AC2A, IEEE AC3A and IEEE AC8B; Control Stabilizers: IEEE PSS1A; Control Governors: IEEE TGOV1 to standard libraries (HY-1387)
- Added a data logging example model (HY-1723)
- Improved ScopeView documentation to include OPREC data logging file (HY-1680)
- Improved checkbox automatic behavior in Sensors form when using the data logger (HYTT-1597)
- Improved Sensors form by hiding nonassignable drivers depending on the signal type (input/output) and adding colors in column "Type" (HYTT-1600)
- Improved precision of time length and start time when reading OPREC files in ScopeView (HYTT-1543)

- Improved license request form by automating machine information generation and adding fields (HY-1653)
- Improved HyWorksApi and ScopeViewApi docstrings and documentation (HYTT-1663, HYTT-1665)
- Improved Python API error messages when using a wrong Python version (HY-1739)
- Improved Python API by adding an exception on HyWorksApi.getComponentParameter if the component or parameter does not exist (HYTT-1673)
- Fixed issue with time step values not properly rounded when generating Hyperlink code for multiple time steps (HYTT-1699)
- Fixed issue when replacing an OPREC data source in ScopeView (HYTT-1586)
- Fixed subcircuit mask corruption adding unwanted carriage returns (HYTT-1745)
- Fixed issue whereby it was possible to set multiple trigger signals in the same signal group via opening separate windows per device (HYTT-1658)
- Fixed "2-winding, series/series" transformer's net_4 pin not connected to the internal model (HYTT-1761)

- Fixed "H(s) w/ dynamic limit" device form that was not displayed anymore (HYTT-1782)
- Fixed "Double value expected" error when there's a new line in HyModelData array parameter (HYTT-1807)
- Fixed Hyperlink support for MATLAB R2013b to R2015a (HYTT-1708)
- Fixed subcircuit units not being correctly saved (HYTT-1679)
- Fixed basic example of Python API test_Windows_Api.py (HYTT-1671)
- Fixed data logger issue whereby some sensors were not being recorded because their signal group was not set to the default group (HYTT-1770)
- Removed Control Logic Operations - Buffer, logic from the library (HYTT-1726)
- C37.118 master: Added option to run the driver on a dedicated core (DRV-2105)
- C37.118 master: Fixed timeout when stopping the simulation (DRV-2172)
- C37.118 slave: Fixed issue with 50 Hz nominal frequency being overridden with 60 Hz (DRVTT-206)
- C37.118 slave: Fixed binding with a specific network interface (DRV-2154)
- C37.118 slave: Fixed use of loopback and wlan network interfaces (DRV-2158)
- IEC 61850: Added support to run the driver on Windows (DRV-2128)
- IEC 61850: Added option to retrieve both simulation flag and test bit (DRV-2129)
- IEC 61850: Added option to enable all Sampled Values and GOOSE transmission/reception by default at the beginning of the simulation (DRV-2129)
- IEC 61850: Added support for fixed-length encoding of GOOSE messages as per IEC 61850-8-1 Ed.2 A.3 (DRV-2129)
- IEC 60870-5-104 slave: Added support for configuration via GUI (DRV-2094)
- IEC 60870-5-104 slave: Fixed data update when no RMS values were configured on floating inputs (DRVTT-213)

## Version 6.1.0.619

- Fixed subcircuit mask corruption (HYTT-1672)
- Fixed many problems in the Sensors form causing loss of configuration (HYTT-1681, HYTT-1683, HYTT-1684)
- Fixed Hyperlink issue preventing code generation with MATLAB R2015a (HYTT-1666)
- Fixed some issues linked to the device rename functionality (HYTT-1692)
- Fixed LLC-12pulse form which was not displaying Input sensors for the Firing parameter (HYTT-1692)

## Version 6.1.0.613

- Added functionality to keep device sensors upon renaming a device (HY-1702)
- Added driver core protection to avoid multiple reservations of the same core upon simulation start
- Added new driver license mechanism based on total number of data points used by all drivers
- Fixed CustomView grid construction adding unnecessary spaces at the bottom that might be noticeable depending on the number of columns (HYTT-1645)
- IEC 61850: Added support for simulation bit
- IEC 61850: Improved timing precision when transmission is synchronized by Oregano card
- IEC 61850: Fixed order of data attributes in GOOSE messages
- IEC 61850: Added support for configuration via GUI
- C37.118 slave: Added support for configuration via GUI
- C37.118 slave: Added support for RTA simulation mode in Windows
- C37.118 slave: Initialized timestamp to system time when using local synchronization source
- Synchronization: Added support for configuration via GUI
- Synchronization: Added support of new profiles in PTP mode

## Version 6.1.0.607

- Added Ok/Apply/Cancel buttons and removed Save/Exit menu items in I/O configuration tool (HYTT-1590)
- Added capability to remember window size in sensor view and set Data Logger as the default view (HY-1705)
- Added support for IEC 61850 driver configuration through the I/O configuration tool
- Added new license version. A new license file is required with version 6.1
- Improved I/O configuration tool Exit functionality with respect to asking user whether to save changes (HY-1648)
- Improved tooltips in Network Sources library (HYTT-1311)
- Improved transformers form by disabling accelerator option in Neutral impedance tab (HYTT-1542)
- Removed controlled view option (HYTT-1609)
- Fixed IEC 62056 master driver documentation (HYTT-1477)
- Fixed issue occurring in Selected Summary window after a data point is renamed (HYTT-1520)

## Version 6.1.0.602

- Added I/O mode validation, no need to set the sendMode for OpalBoards anymore (HY-1694)
- Added MegaBytes to the available data logger file size limits (HY-1686)
- Added validation of the remaining disk space before writing the data logging file (HY-1686)
- Added capability to manipulate the data integrity (loss of data, duplication, delay and more) of IEC 61850 streams (HY-1622)
- Added "IEC 61850 data integrity" to Control Power Tools library (HY-1622)
- Added new protection relay library with functions 21, 27, 40Q, 50/51, 59, 81 and 87T (HY-1252)
- Added view filters and ability to remember customized view in Sensors form and Selected Summary window (HY-1705)
- Added Global Configuration dialog box in I/O configuration tool to set the sendMode as well as other options (HY-1697)
- Fixed host and target version check bypassed by the API (HYTT-1467)

- Fixed start/stop button greyed out incorrectly when setting a preference using the API (HYTT-1512)
- Fixed importing an example model not overwriting the entire example folder when it already exists (HYTT-1510)
- Fixed issue with multiple definitions of S-function with Hyperlink generated code (HYTT-1487)
- Fixed failed analysis with models having large attributes in subcircuits (HYTT-1519)

## Version 6.1.0.591

- Added external control capability on "Dynamic load" (HY-1593)
- Added "3-winding, 1-ph" to Network Transformers library (HY-1396)
- Added "3-winding, 1-ph w/tap" and "2-winding, 1-ph w/tap" to Network Transformers library (HY-1462)
- Added engine log file for each circuit (HY-1685)
- Added validation of the remaining disk space before starting the simulation (HYTT-1497)
- Added ability to open data logging record files (OPREC files) in ScopeView directly from Windows (HY-1691)
- Added a Data Source Parameters panel to ScopeView for OPREC files, allowing for navigation through the record (HY-1561)
- Added ability to open OPREC files in ScopeView's file chooser and removed Data Logger tab (HYTT-1486)
- Added default prefix unit "mega" for PQ mode in parameters form (HYTT-1298)
- Improved transformers tooltips (HYTT-1464)
- Fixed inverted pins for secondary and tertiary on "Zigzag, phase-shifting" transformer (HYTT-1480)
- Fixed Windows language issue with TestView (HYTT-1394)
- Fixed issue with version switching on the simulator using the API (HYTT-1443)
- Removed "PQ" group unit in "Decoupling element" form (HYTT-1343)

## Version 6.1.0.574

- Added the possibility to optimize the mapping of the tasks manually (HY-1589)
- Added validation of the license integrity before installation on Windows (HY-1576)
- Improved IEC 60870-5-104 performance (HYTT-1407)
- Fixed equation's result in form that would revert to former value when the simulation starts (HYTT-1360)
- Fixed execution process (Analyze/ Map Tasks/ Generate Code) that is repeated even when there's no modification to the circuit (HYTT-1342)
- Fixed simulation infinite loop when using a Hyperlink model in fixed time step that is less than the simulation time step (HYTT-1249)
- Fixed short CP line issue when automatically converting to PI line (HYTT-1390)
- Fixed error when trying to add a CustomView to a subcircuit and View directory is not created (HYTT-1007)
- Fixed ScopeView template sensor assignment for configuration 11 (HYTT-1340)
- Removed UCM unit limitation; it is now possible to enter any custom unit (HY-1590)

## Version 6.1.0.557

- Added I/O configuration tool and updated Sensors form (HY-1538, HY-1539, HY-1562, HY-1568)
- Added UI to configure the target analog and digital I/O [OpalBoards] (HY-1571)
- Added Data Logger in Sensors form (HY-1532)
- Added DesignWorks API functions to Python API (HY-1491)
- Added support for reloading FPGA configuration at simulation startup (HY-1412)
- Added State-space example models for single-phase and three-phase systems (HY-1270)
- Added distance relay (21) permissive overreach transfer trip (POTT) TestView example model (HY-1343)

- Added support for MATLAB R2016b and R2017a
- Added licensing on number of nodes (HY-906)
- Added a warning when the selected target does not have a valid license (HYTT-1000)
- Added option to display license content in Windows activation tool (HY-852)
- Added warning at 15 days of license end on Windows (HY-1016)
- Added tool to compare license content when updating a license on Windows (HY-1578)
- Added option to recover a backed-up license file on Windows (HY-1580)
- Improved OP4510 standard bitstream (HY-1404)
- Improved UCM documentation: added available global variables (HY-1427)
- Improved ScopeView documentation with more details on the various functions (HY-215)
- Fixed hydraulic turbine diagram and location of Turb_mod parameter in "Synch. machine (hydraulic)" form (HYTT-1264, HYTT-1283)
- Fixed acquisition for time step greater than 1 millisecond (HYTT-1066)
- Fixed "Dynamic Load" lower limit on Kq parameter (HYTT-1243)
- Fixed Hyperlink multiple time step code generation when there is a space character in the path (HYTT-1247)
- Fixed EDD importation tool: manual path input works without pressing Enter key and documentation is updated (HYTT-1230)
- Fixed EDD importation bug when folder name contains "EDD" (HYTT-1281)
- Fixed TestView hypExcel: Auto Import Data on Play not working (HYTT-1280)
- Fixed units and default values in "Network Sources: AC I source, programmable" and "AC V source, programmable" (HYTT-1186)
- Fixed disappearing observable with "Circuit breaker, 1-ph" and 3-ph when analyzing network (HYTT-1299)
- Fixed "Dynamic load" equations displayed in the form (HYTT-1303)
- Fixed issue with Simulink multiple time step code generation (HYTT-1327)
- Fixed issue when taking large snapshots (HYTT-1148)

## Version 6.0.13

- Added support for signed integer data for I/O sensors (HYTT-1145)
- Added handshake between simulation server and thread to improve behavior at simulation stop (HY-1397)
- Added Reset console button to View tab of the ribbon for the user to reopen or clear the model consoles (HY-1089)
- Improved topology analysis report (HY-1194, HYTT-1199)
- Improved firewall checkbox behavior in the installer (HY-1432)
- Improved "Target output, digital 4" form (HYTT-1013)
- Improved API documentation (HYTT-1092)
- Improved "Synch. machine (thermal)" speed regulator diagram in the form (HYTT-1216)
- Improved "Decoupling element" form usability (HYTT-1213)
- Fixed issues with multiple time step code generation in Hyperlink (HYTT-1122)
- Fixed engine crash when the current source frequency is set to zero (HYTT-999)
- Fixed protection on the analysis of an imported MATLAB multiple time step model with a wrong time step

(HYTT-1128)
- Fixed random disconnection of IEC 60870-5-104 Slave TCP communication
- Fixed EDD importation when unit contains a space character (HYTT-1185)
- Removed device "Decoupling transformer" from library (HYTT-1225)

## Version 6.0.12

- Add OP4510 to standard bitstreams - Traditional I/O (DO, DI, Single TSDO, Single TSDI)(HY-1404)
- Added support for bundle to bundle and pin to bundle connections to the Python API (HYTT-1046)
- Added support for auto-expanding subcircuit pages when importing an EDD (HY-1420)
- Added loadSensors function to Python API (HYTT-1010)
- Added support for resetting performance monitoring with the Python API (HYTT-1016)
- Added support for excluded devices when importing an EDD (HY-1428)
- Added new probes in the SIMOUT log to monitor simulation initialization and deinitialization timings (HY-1391)
- Added support for gcc compiler on Red Hat 32-bit (HY-1406)
- Added support for IEC 61850 in RTA offline simulation on Windows
- Added preference to enable and disable automatic insertion of Transceiver, ItoF and FtoI block; disabled by default (HY-1364)
- Added console windows to display simulation log (.SIMOUT file) (HY-1142)
- Improved forms for transformers with tap changer and decoupling element (HYTT-542, HYTT-1036)
- Improved form for 3-ph bus and 1-ph bus (HY-1188)
- Fixed Hyperlink multiple time step generation with MATLAB R2014b (HYTT-1054)
- Fixed parallel code generation producing a compilation error (HYTT-1083)
- Fixed issue with Runners monitoring never resetting (HY-1392)
- Fixed issue with switch version function on OPAL-RT kernel modules (HYTT-1008)
- Fixed cable/line data JavaScript error (HYTT-1028)
- Fixed ribbon that could stay disabled after modifying the design (HYTT-850, HYTT-946)
- Fixed acquisition error when simulation has a large time step (HYTT-997)
- Fixed wrong text in Target output analog form (HYTT-1014)

## Version 6.0.11

- Added neutral pin on saturable transformers "2-winding, w/ sat", "3-winding, w/sat", "3-winding, int tertiary w/sat" (HY-1362)
- Added support for variable size parameter arrays when importing an EDD (HY-1163)
- Added function to python API to edit sensor unit and gain (HYTT-928)
- Added support for IEC 61869-9
- Added support for 256 Samples Per Cycle with IEC 61850-9-2LE
- Added support for bundle port connector when importing an EDD (HYTT-986)
- Added support for multithreaded code generation (HY-1371)
- Added support for observables when importing an EDD (HY-1384)
- Added support for bus observables when importing an EDD (HYTT-990,HY-1389)
- Added option to only update parameter values from an EDD instead of importing the network (HY-1410)
- Added support for unknown devices when importing an EDD by replacing them with a dummy device to keep connections (HY-1415)
- Added support for UCM when importing an EDD (HY-1416)
- Added support for ScopeView in the Python API

- Fixed "machine_id not found" when displaying license info (HYTT-974)
- Fixed connections not being displayed when moving a block with a bundle connected to observables (HYTT-970)
- Fixed various issues with EDD importation (HY-871, HY-873, HYTT-984, HY-1389)
- Fixed engine crash if invalid path in network device "State-space" (HYTT-950)
- Fixed code generation error with Hyperlink multiple time steps (HYTT-942)
- Fixed binding of specific Ethernet interface for DNP3 Master
- Fixed core assignment of asynchronous computation for DNP3 Master
- Fixed syspart activation / deactivation on Red Hat 32-bit targets to avoid freezing. This fix disables parallel compilation on Red Hat targets (HYTT-882)
- Fixed "C code" form (HYTT-954)
- Fixed load flow crash after EDD importation that may appear in some case (isolated network components) (HYTT-908)
- Improved ICD parser tool to generate configuration files from any of SCL, CID or ICD file
- Improved HYPERSIM exit to close all background processes (HY-2312)

## Version 6.0.10

- Added support for gcc compiler on CentOS 64-bit (HY-1354)
- Added support for files generated with the Data Logger in ScopeView (HY-1318)
- Added support for IEC-60870-5-104 on CentOS 64-bit
- Added support for DNP3 master
- Added option "balanced/unbalanced" to 3-phase components and set default value to "balanced" for all parameters (HYTT-814)
- Improved transformers' form (HYTT-861)
- Improved feedback when Node Connector is replaced by a resistance in the topology (HY-1111)
- Fixed GOOSE encoding/decoding of types Dbpos, Tcmd and Check
- Fixed SCL parser to handle GOOSE datasets with multiple FCDA with the same object and attribute names
- Fixed transmission and reception of non-floating data types for IEC 60870-5-104 Slave protocol
- Fixed issues with C code components imported from EDD (HYTT-831 and HYTT-856)
- Fixed issues with saturation transformers' form (HYTT-815)
- Fixed "AC V source, programmable", "MMC valve (FB cells)", "MMC valve (HB cells)" forms: removed unnecessary parameters (HYTT-815)
- Fixed units for speed and torque in induction machines' form (HYTT-864)
- Fixed loading of .pun line parameter files (HYTT-765)
- Fixed HYPERSIM freeze when saving a UCM to library (HYTT-873)
- Fixed issue with several instances of multiple time step Hyperlink devices in a model (HYTT-880)
- Fixed incorrect Bus nominal voltage value before the first Analyze (HY-1294)
- Fixed issue with the Export Netlist to Excel file feature (HYTT-888)
- Fixed wideband lines Map Tasks error (HYTT-896)
- Fixed Analyze issue when using "Node connector, 3-ph" and a single-phase signal on the same bus (HYTT-906)
- Fixed netlist not opening when there's more than 1 subcircuit level (HYTT-941)
- Fixed EDD importation problem with line "Frequency dependent, 2-ph" (HYTT-938)
- Fixed TestView test sequence crashing when "Start simulation" is not checked (HYTT-927)
- Fixed matrix widget not displaying data correctly (HYTT-937)

## Version 6.0.9

- Added "pu" to supported units in UCM (HYTT-763)
- Added automated setup of environment paths with the Python API (HYTT-742)
- Added access to Ifd_init and Pmec on machine models (HY-1339)
- Improved algebraic loop detection (HYTT-800)
- Fixed issues with subcircuits saved in a library (HYTT-780)
- Fixed data reset to default values at the creation of subcircuit (HYTT-779)
- Fixed issue with missing observables on the Thyristor Switched Capacitor (TSC) and Thyristor Controlled Reactors (TCR) devices (HYTT-1228)
- Fixed uninstaller to close hypersim.exe process (HYTT-755)
- Fixed bundle connections from device to device and from device to breakout (HYTT-751)
- Fixed crash when generating code for very large models (HYTT-773)
- Fixed issue with file selection in Network Lines and Cables - Wideband line/cable (HYTT-759)
- Fixed design that can be opened before HYPERSIM is loaded (HYTT-749)
- Fixed issue with TCR model and acquisition (HYTT-706)
- Fixed activation tool (HYTT-801)
- Fixed issue with load flow options not being updated upon execution (HYTT-758)
- Fixed issues with the Timing tab of the lines "Constant param, 6-ph w/ fault", "PI section, 6-ph w/ fault" and "PI section, 12-ph w/ fault" (HYTT-838)
- Increased the maximum number of OpalBoards supported on a target from 32 to 64 (HYTT-813)

## Version 6.0.8

- Added documentation: How to install HYPERSIM on a target (HY-1219)
- Added support for multiple time step (and multi-rate) Simulink models (HY-1243, HY-1241, HY-1199)
- Added remote offline Real-time Accelerated (RTA) mode for Linux platforms (HY-923)
- Added Controlled simulation by ScopeView in RTA mode (HY-1220)
- Added support for Custom View on subcircuits (HY-1218)
- Added support for basic math functions in subcircuit forms (HYTT-595)
- Added support for ode14x solver to Hyperlink (HYTT-613)
- Added information about design modifications, sensor file name, simulation time step and running simulation status in the model console title (HY-672, HY-671, HY-869)
- Added code directory validation in the simulation options UI (HYTT-677)
- Added HYPERSIM process restart when installing a new license (HYTT-683)
- Added ECF files association with HYPERSIM during installation (HY-869)
- Added single-user mode as default simulation mode (HY-1276)
- Added automatic load data source to the current design when starting ScopeView (HY-929)
- Added export to XLSX capability in netlist
- Added installation of .NET Framework with HYPERSIM if missing on the Windows computer (HY-1038)
- Added example model for the Python API in TOOLS (HY-645)
- Improved time to open a model when a target is unavailable (HYTT-685)
- Fixed issues with the sequence order in the TestView Excel and Miscellaneous commands (HYTT-634)
- Fixed issue with the TestView hypBreaker command and PI sections with fault (HY-654)
- Fixed issue with allowed range for tunable value in Hyperlink (HYTT-558)
- Fixed simulation crash when a second user starts another simulation (HY-1231)
- Fixed wideband data file values not loading (HYTT-645)
- Fixed link to user manual documentation in the ribbon and HyperView (HYTT-638)
- Fixed force build generation after cleaning the code generation directory (HYTT-640)
- Fixed link to user manual in the HYPERSIM ribbon and HyperView (HYTT-638)
- Fixed issue with simulation start after cleaning the code generation directory (HYTT-640)

- Fixed task mapping using only one core in RTA mode for any load level value (HYTT-658)
- Fixed importation of Simulink models with scopes in subcircuits (HYTT-632)
- Fixed issue where a target would freeze with a model running on 2 FPGA (HYTT-644)
- Fixed verbose mode option being shared between different models (HYTT-639)
- Fixed observable bundles not persisting (HYTT-627)
- Fixed missing observables on 1-phase breaker (HYTT-505)
- Fixed backward compatibility on compilation of MATLAB Simulink 2012a models (HYTT-625)
- Fixed issue where two Simulink models would prevent code generation by giving multiple definitions (HYTT-656)
- Fixed comments causing errors in subcircuit parameters form (HYTT-674)
- Fixed unique subcircuit components value reverting to the value of the first subcircuit upon simulation start (HYTT-662)
- Fixed precision issue for Hyperlink multiple time step model (HYTT-708)
- Fixed ScopeView function Crossing_Time impacting function Clearing_time (HYTT-710)
- Fixed issue with LoadIn function on VC707 FPGA (HYTT-694)
- Fixed bugs and reorganized categories in Netlist view
- Fixed issue in saturation tab of 2-winding transformers' form (HYTT-709)
- Fixed issue with non-inline S-function in Hyperlink (HYTT-731)
- Fixed clear code directory that cannot be executed when using UCM and simulating on Windows (HYTT-673)
- Removed validation for I/O sensors when running Map Tasks for offline simulation (HY-1105)
- Removed duplicated error messages when updating a UCM when the reference model is missing (HY-619)
- Removed duplicated exit dialog when leaving TestView (HY-1206)
- Removed exit dialog when leaving HyperView (HY-1206)
- Grey out parameters that are not editable while the simulation is running (HY-1251)

## Version 6.0.7

- Added an option in TestView to set the logo appearing in the PDF report (HY-124)
- Added a progress bar when importing Excel files in TestView (HY-1115)
- Added automatic Analyze on Load preferences in the TestView Settings (HY-1127)
- Added .prj filter when opening a TestView project (HY-954)
- Added support for XLSM file type in the TestView Excel importation (HY-1168)
- Added file browser in the COMTRADE playback device to replace the path text field (HYTT-597)
- Fixed issue when opening a design too quickly at HYPERSIM startup (HY-618)
- Fixed various issues with target and simulation options UI
- Fixed issue with bundle automatic connection when importing an EDD (HYTT-590)
- Fixed issue with ping diagnostic for Windows OS other than English (HYTT-567)
- Fixed duplicated error messages in the case of missing POW or EMTP compatibility issues (HYTT-583)
- Fixed issues with firewall exceptions configured by the installer (HYTT-581)
- Fixed issue where a model would log information in another model log (HYTT-572)
- Fixed engine crash if the code directory is invalid (HYTT-611)
- Fixed TestView Windows Settings not being updated correctly in the Simulation Options (HYTT-603)
- Fixed missing group unit in 1-phase circuit breaker (HYTT-614)
- Fixed calculation step that is not set correctly if simulation option GUI is not opened before starting a simulation (HYTT-628)
- Removed interoperability advanced options from TestView (HYTT-570)
- Replaced #DIV/0! by a double maximum value to represent infinity when exporting to Excel (HY-836)
- Accelerated opening of TestView when handling a lot of data (HY-739)
- Accelerated importation of data from Excel (HY-1167)

## Version 6.0.6

- Fixed bug preventing Windows hosts not in French or English to compile for real-time (HYTT-601)

## Version 6.0.5

- Added a new target management user interface
- Added feedback for the user when running the diagnostic tool (HY-1106)
- Improved the simulation options panel
- Improved example model organization by removing one folder level (HY-927)
- Fixed contextual ribbon greyed out options (HY-1074)
- Fixed the diagnostic creating large files during the installation (HYTT-543)
- Fixed slow acquisition when using a lot of sources with high sampling rate (HYTT-530)
- Fixed Linux-based model importation: on a non-empty model, a new model is created (HYTT-524)
- Fixed tooltip too short duration in TestView (HY-964)
- Fixed target connection issue when the hostname/IP-address combination is not present in /etc/hosts (HY-1056)
- Fixed default simulation option to Real-time when on a target (HYTT-538)
- Fixed many bugs in the TestView connection settings

## Version 6.0.4

- Added support for parallel compilation with HYPERSIM Linux on CentOS 64-bit (HY-1048)
- Added parameters forms for all components
- Added support for I/O components in the Linux-based models importation tool (HY-860)
- Added code directory versioning (HY-1042)
- Added Scope support to Hyperlink. Scopes are replaced with a bundle of output signals
- Added a system diagnostic at the end of the installation (HY-913)
- Added more explicit error messages upon simulation crash (HY-1004)
- Added API functions to edit a design (devices, connections, sensors) (HY-1059)
- Added network tests to the diagnostic tool (HY-1076)
- Added tool to make connections between bundles
- Fixed OpalBoard I/O not functional when using only DI/DO without AD/DA
- Fixed Hyperlink to support native SPS S-functions with MATLAB R2016a
- Fixed HYPERSIM template and models to support subcircuits in libraries (HY-829)
- Fixed Zig-zag transformer form's parameter: Voltage phase shift type (HYTT-528)
- Fixed OpalBoard I/O not functional on hardware synchronized slave board (with bitstreams generated wit RT-XSG version earlier than 2.3.4)
- Fixed code regeneration not executed upon renaming a bus (HY-684)
- Fixed issues with sensors importation (HY-685)
- Fixed issue when adding a subcircuit to a library (HY-829)
- Fixed issue with port loadIn on CentOS 64-bit (HYTT-500)
- Fixed HyCore automatic start at target startup (HYTT-508)

- Removed Netlist and Load Flow tabs in HyperView (now available in the HYPERSIM ribbon) and fixed broken links (HY-997)

## Version 6.0.3

- Added support non-inline S-functions in the Simulink importation tool (HY-996)
- Added support for Windows 10
- Added support for CentOS 64-bit (HY-974)
- Added option for multi-core compilation on CentOS 64-bit (HY-614)
- Added parameters forms for Sources and Transformers
- Added support for MMC configuration: different number of valves per module (HYTT-487)
- Improved license management for first time installation
- Improved speed of "Analyze" with some designs (HYTT-471)
- Improved model compilation time on Windows by removing optimizations for real-time (HYTT-490)
- Fixed error detection when UCM code does not compile (HY-478)
- Fixed UCM importation too slow or failing with big models (HYTT-498)
- Fixed hypersim.exe crashes due to XfoCT and XfoPT components
- Removed obsolete license error messages (HYTT-496)

## Version 6.0.2

- Added support for hardware OP4510_TE0741 (HY-896)
- Added support for variable names for the host license (Windows) (HY-854)
- Added support for variable names for the target license (Linux) (HY-854)
- Added a graphical license activation tool (HY-683)
- Added license validation from the target manager before installing it to the target (HY-972)
- Added license validation at the end of the installation. Activation tool started if no valid license is found on the host (HY-924)
- Added UCM importation and update ability to the Python API (HY-827)
- Added a "Diagnostic" command for targets (HY-907)
- Added validation to avoid modifying the I/O sensor configuration while the simulation is running (HY-471)
- Added check for running instances of HYPERSIM, HyperView, ScopeView or TestView when installing or uninstalling (HY-880)
- Added parameters forms for Filters and RLC
- Improved startup speed (HYTT-841)
- Fixed ALT + double-click to open subcircuit content (HYTT-440)
- Fixed SI/PU conversion for transformers (HYTT-401)
- Fixed several bugs of the Linux-based design importation tool
- Fixed several bugs of the Python API
- Fixed several connection issues when using bundles or page connectors in the graphical interface
- Fixed "Hardware synchronized" mode with OpalBoards (HYTT-473)
- Fixed sensors which may disappear after "Analyze" (HYTT-472, HYTT-477)
- Merged license files into a unique file for the host and another one for the target
- UI: added check and repair bundle structure on opening file
- UI: added various improvements to bug sniffing and repair for bundles
- UI: added handle rotations of EMF pictures in device symbols
- UI: added reconnection and routing of signals after "Quick create subcircuit"
- UI: added tooltip messages for all built-in ribbon buttons

- UI: added possibility to resize single tab properties dialogs
- UI: fixed storing zoom and pan info in subcircuits
- UI: fixed issues in bundle internal signal handling when copying a circuit
- UI: fixed small issues with menu items such as adding "..." in some cases
- UI: fixed not checking device instance count for full design from top level
- UI: fixed bomb occurring if multiple subcircuits are open and "Close All But This" is selected on a subcircuit
- UI: improved port connector placement and orientation in "Make subcircuit"

## Version 6.0.1

- Added Apply/Cancel buttons on the "Sensors" tab in the forms
- Added an option to locate the sensor inside the design from the "Selected Summary" list
- Added ALT-Click event on devices "Circuit breaker" and "Fault to ground" to modify steady-state condition
- Added breaker automatic redraw depending on the breaker steady-state condition
- Fixed failure to load sensors when "Analyze" has not been executed before (HYTT-402)
- Fixed invalid simulation options when "Analyze" has not been executed before (HYTT-693)
- Fixed device renaming when "Analyze" has not been executed before(HYTT-387)
- Fixed bad calculation where results could diverge after some time (HYTT-356)
- Fixed breaker phase that cannot be operated while the simulation is running (HYTT-399)
- Fixed default values for switches' snubber (HYTT-389)
- Fixed task mapping to take into account performance factor when simulating on Windows (HY-886)
- Fixed crash when working with transformers in PU (HYTT-408)
- Fixed wideband line algorithm with complex poles
- Fixed missing local environment variable in TestView (HYTT-417)
- Fixed wrong pin type in "Induction Machine" devices (HYTT-411)
- Fixed internal connection of "C" device (HYTT-415)
- Removed the requirement to update the target Java version

## Version 6.0.0

- New graphical engine in Windows, shared with EMTP-RV
- Reorganized device libraries
- Refactored Hyperlink tool for a common functionality with UCM
- Added tool to import Linux-based models
- Added a diagnostic tool for debugging
- Added UI to manage versions and install updates
- Added quick link to SIMOUT log
- Added quick link to enable verbose mode of SIMOUT log
- Added watchdog to force target analog and digital outputs to zero when the simulation crashes (configuration 9 on OP5142 and ML605)
- Added Simulink support for 2012a to 2016a (32-bit and 64-bit versions)
- Added offline Real-time Accelerated (RTA) solver for Windows
- Improved stability of subcircuits
- Removed Simulink support for 2009a, 2010a and 2011a
- Removed need for administrative rights to use the software (still required for installation)