RELEASE NOTES

Latest Update: *June 28, 2021*

CONTENTS

HYPERSIM

Version 2021.1.0

- Added exciter library model REXSYS (HY-2379)
- Added governor library model WESGOV (HY-2409)
- Added example model HVDC & FACTS | Static Synchronous Series Compensator (SSSC) (HY-2527)
- Added example model HVDC & FACTS | Inified Power Flow Control (UPFC) (HY-2528)
- Added example model Benchmarks | Kundur 4-Machine Power System (HY-2520)
- Added example model Protection | IEC 61850 Substation Automation System (SAS) (HY-2530)
- Added support for Python version 3.7 (HY-2400)
- Added the following Python API commands | getAllDevicesNames, renameSignal, addPinsToDevice, createSubCircuit, ScopeView.setDataSourceParameter (HYTT-3641, HYTT-3654, HYTT-3669, HY-2515, DLOGTT-53)
- Added subcircuit support in the following Python API commands | addDevice, includeDevice, removeDevice, renameDevice, connectDevices (HYTT-3669)
- Added Signal routing library models Radiolink emitter, Radiolink receiver (HYTT-3661)
- Added error message to prevent users from opening more than one instance of HYPERSIM (HYTT-3281)
- Added option to "solve control inputs before when linked to power components" advanced option in simulation settings. It remains unchecked for existing models, but is activated by default with newly created models
- Added support for EXST1 and ST1A in PSS®E import
- Added carrier frequency input and dead time parameter in PWM average generators for 2-Level Converter and Full-Bridge Converter (HYTT-3627)
- Added Multi-Breaker and CmdLine commands in TestView
- Improved I/O assignment and sensor management workflow (HY-2472)
- Fixed issue where some signals in a bundle would be renamed during EDD import, potentially leading to wrong signal connections on the same observable (HYTT-3637)
- Fixed issue where some signal names could conflict during EDD import, potentially leading to import interruption by a popup (HYTT-3628)
- Fixed the output behavior of H(s) component at the beginning of the simulation when a non-zero constant is connected to the "init" input or a zero constant is applied at input "u"(HYTT-3639)
- Fixed DC Circuit Breaker form default values to avoid solver divergence in some cases (HYTT-3470)
- Fixed Task Manager's SaveConfig option wrongly opening OpenConfig menu (HY-2482)
- Fixed issues with scripts generated using a template in the Sequence Manager where paths include space characters (HYTT-3829)
- Fixed issues with EDD import when models containing UCMs have their .def file located next to the .edd file (HYTT-3673)
- Fixed Control Exciter library models | AC2A Fixed the initialization of VA0 and the non-windup integrator producing the VE signal(HY-2491)
- Fixed Control Exciter library models | EXAC3 Fixed Efd output at the initialization of the feedback loop signal when EFDN is superior to Efd0 (HY-2490)
- Fixed Control Exciter library models | EXST1 Fixed various issues with In1, Vt and Vc1 pins and the lower limit of the exciter (HYTT-3671)
- Fixed Autotransformer displayed base winding voltages in rmsLL (HYTT-3787)
- Fixed Voltage Source base voltage value in EDD export
- Fixed several components that were not reported under the correct category in the Netlist
- Removed protection example model Distance_21_POTT
- UI: Fixed issue where some connections wouldn't show on the design when connecting multiple pins to

the same bundle (HYTT-3660)
- UI: Fixed default signal names being cleared when doing Paste Special with "keep old names"
- UI: Fixed new default names occasionally assigned to devices on Paste Special even if "keep names" specified
- I/O interface | General : Improved network configuration through harmonization of parameters across relevant interfaces (C37.118, DNP3, IEC 60870-5-104, Modbus) and implementation of automatic IP aliasing generation (DRV-3563)
- I/O interface | C37.118 Slave : Fixed driver behavior when multiple points connected to the same sensor (DRVTT-1360)
- I/O interface | DNP3 : Added support for double bit binary inputs (DRV-3694)
- I/O interface | DNP3 : Added support to run the driver on Windows (DRV-3744)
- I/O interface | DNP3 : Added support for integrity polling (new read mode) (DRVTT-1209)
- I/O interface | IEC 60870-5-104 : Fixed display issue in point lists of the configuration menu (HYTT-3761)

- I/O interface | IEC 61850 : Fixed model loading and resetting issues coming from an incompatibility between IEC 61850 and Modbus RTU (Master and Slave) (DRVTT-1343)
- I/O interface | MODBUS Slave & Master : Fixed initialization failures due to synchronization issues
- I/O interface | OPAL-RT Board : Added support for OP5369 digital card (PJ000271-142)
- I/O interface | Synchronization : Added automatic discovery of the network interface name (DRV-3730)
- FPGA-Based Simulation | Added support for user-defined time step configuration
- FPGA-Based Simulation | Added generation of eHS compilation logs (EFS-3777)
- FPGA-Based Simulation | Added support of OP4510 Kintex-7 410T based firmware (EFS-3878)
- FPGA-Based Simulation | Added support for QE on RS422 (EFSTT-794)
- FPGA-Based Simulation | Added support for configuring more than 32 AO channels
- FPGA-Based Simulation | Improved the names of machine input and output signals (EFSTT-722)
- FPGA-Based Simulation | Fixed issues with configurations using more than 2 SCIM/DFIM/SM (EFSTT-951)
- FPGA-Based Simulation | Fixed the output amplitude of DQ voltage of the SCIM/DFIM/SM being dependent on time step (EFSTT-986)
- Communication Network Simulation | Improved user workflow (DRV-3736)

Version 2020.3.0

- Added user guide to help EMTP users go to real-time with HYPERSIM.
- Added Sequence Manager tool to record and manage test sequences from manual manipulations.
- Added support for wound rotor in recently added Asynchronous Machine [The former induction machine models will be kept as Legacy]
- Added support for MATLAB R2020a and R2020b
- Added exciter library models IEEET2, IEEET3, IEEEVC, EXDC2, EXST1, EXST2, EXPIC1, SCRX
- Added governor library model WEHGOV
- Added stabilizer library model PSS2A
- Added example model EMTP Compatibility | EMTP Compatibility Introduction
- Added example model EMTP Compatibility | EMTP IEEE 39 Bus Benchmark
- Added example model Protection | Directionnal Overcurrent Protection.
- Added example model Renewable Energy | Type 4 Wind Farm model.
- Added example model Distribution and Industrial Power Systems | Emergency Diesel-Generator, Asynchronous Motor and 25 Synchronism-Check.
- Added a Data Name filter in the Sensor configuration view. (HY-2434)
- Added options to rename and delete I/O Interfaces. (HY-2318)
- Added Sigcmp to Advanced Function Editor in ScopeView, allowing comparison of a test signal to a reference signal with a user-defined tolerance. (HY-2418)
- Added Time format option in the data logger file browing with ScopeView, allowing easily shifting results

to time = 0 in graphs. (HY-2315)
- Added support for EXAC3, IEEET1, HYGOV, SCRX, AC8B, PSS2A and WEHGOV in PSS®E import
- Added progress bar when importing PSS®E files. (HYTT-3605)
- Added progress bar on Apply/Ok of I/O interface modifications to better follow updates of large I/O configurations. (HY-1948)
- Added Python API function to rename devices. (HYTT-3572)
- Improved Python API command setComponentParameter, making it synchronous, thus removing the need to add wait time after its call. (HYTT-2341)
- Improved PSS®E import to skip buses with IDE=4 and all components connected to them
- Improved PSS®E import to manage multiple sources (machines or voltage sources) on the same bus; the biggest source (the one with highest PT value in PSS®E) stays as is, whereas the smaller ones are connected through an intermediary resistor and their type is changed to PQ
- Fixed inconsistencies in tooltips of Network component forms. (HYTT-...)
- Fixed unit of winding voltages for Saturable 2-winding transformer with tap changer that wasn't set to rmsLL like other transformers in the previous version. (HYTT-3493)
- Fixed issue where HYPERSIM would not start properly on a completely new Windows installation because of missing Microsoft library. (HY-2365)
- Fixed various issues with In1, Vt and Vc1 pins and the lower limit of exciter ST1A. (HY-2403)
- Fixed issue in AC3A exciter form where diagram would show Voel. (HYTT-3623)
- Fixed voltage source base voltage display value. (HYTT-3502)
- Fixed issue where sensor change could be detected even if no changes were done. (HYTT-3576)
- Fixed issue during uninstallation where some documentation files would remain. (HYTT-3330)
- Fixed occasional crash of the a model engine when opening the Netlist after a specific sequence of actions. (HY-2453)
- Removed the automatic generation of the EXata CPS files when clicking opening I/O Interface. (HYTT-3439)
- I/O interface | OPAL-RT Boards : Fixed issue where the FPGA bitstream could be reprogrammed twice upon starting the simulation. (DRV-3511)
- I/O interface | OPC UA Server : Fixed Advanced Options which where showing at the root of the I/O Interface instance rather than in other elements of the tree. (HYTT-3414)
- I/O interface | DNP3 : Fixed possible crash of asynchronous process with certain configurations. (HYTT-3414)
- I/O interface | IEC61850 : Fixed UI crash when .icd file parsing failed. (DRVTT-1194)
- I/O interface | MODBUS Slave : Fixed ssue with initial values and float data types. (DRVTT-1172)
- I/O interface | MODBUS Slave : Improved automatic setting of ID for TCP slaves. (DRVTT-1093)
- I/O interface | C37.118 Slave : Fixed issue when sensors of a given slave are dispatched on different cores. (DRVTT-1238)
- I/O interface | C37.118 Slave : Fixed missing editable slave name in I/O Interface configuration. (HYTT-3517)
- FPGA-Based Simulation | Added support of release notes in firmware description. (EFS-2388)
- FPGA-Based Simulation | Added 1st order low pass filter on PMSM VDQ PQ measurements. (EFSTT-912)
- FPGA-Based Simulation | Added upport of native SFP link on all firmware to allow multi-FPGA configuraton. (EFS-3500)
- FPGA-Based Simulation | Fixed format of angle of PMSM VDQ FPGA module.
- FPGA-Based Simulation | Fixed issue on second machine of Dual PMSM Motor Vdq with park transform, rotor offset and initial angle parameters. (EFS-3614)

Version 2020.2.0

- Added filter to list components per task in the netlist (HYTT-3385)
- Added export/import project option in the ribbon to facilitate sharing projects with other users (HY-2027)

- Added help button in load flow panel (HY-2275)
- Added exciter library models DC2A, DC3A, ST2A, EXAC1, EXAC2, EXAC3 and T1 (HY-2293, HY-2331, HY-2332, HY-2343, HYTT-3360)
- Added governor library model HYGOV (HYTT-3360)
- Added example model FACTS & HVDC | TCSC (HY-2307)
- Added example model Distribution & Industrial Power Systems | GHOST Microgrid Model (HY-2348)
- Added example model Distribution & Industrial Power Systems | Permanent Magnet Synchronous Machine-based Variable Frequency Drive (VFD) (HY-2349)
- Added example model How To (Components) | Filter, Fourier, Mean, Power, Sequence Analyzer (HY-2353)
- Added option to copy/paste content of error message windows (HY-2294)
- Added relative file path capability in wideband line and COMTRADE playback components (HY-1583)
- Improved user feedback when diagnostic fails during software installation (HYTT-3382)
- Improved HYPERSIM exiting time(HYTT-3292)
- Improved diagnostic to gather more logs (HYTT-3291)
- Improved tripping response time of protection model 81 - Frequency (HY-2309)
- Improved user data input in network components by standardizing units of voltage and current (HY-2087)

- Improved Renewable Energy example models with new PV library model (HY-2284)
- Improved duration of long tooltips to remain as long as the mouse-over (HYTT-3044)
- Fixed close connection with signal group when the last SignalGroup instance is closed/destroyed with Python API (RTLABTT-1517)
- Fixed backward reading of OPREC files when data losses occurred (RTLABTT-2759)
- Fixed consecutive data logger acquisitions after frame configuration modifications (RTLABTT-2836)
- Fixed data logger pre-trigger reconfiguration while the simulation is running (specific case: original value = 0, new value != 0)
- Fixed target crash when opening the Data Logger menu while simulation is running on CentOS (HYTT-3260)
- Fixed unsaved sensor configuration when saving the model (HY-1535)
- Fixed removing UCM definition files from the _hyp folder when the last UCM of its kind is deleted from the model (HY-1671)
- Fixed display issue showing empty sensor list when moving a column in the summary view (HYTT-3417)
- Removed possibility to manually modify breaker status with CTRL+ALT+RIGHT CLICK when its Control type is set to External and simulation is running (HYTT-3407)
- I/O interface | IEC 61850 : Improved driver to send data types as defined in the .icd file for SV NLE (DRV-3392)
- I/O interface | IEC 61850 : Removed interface pre-configuration when adding a new interface to a project (DRVTT-42)
- I/O interface | MODBUS : Fixed issues occurring with error codes 32 and 9 (DRVTT-1079)
- I/O interface | OPAL-RT Boards : Added support for MMC UI-based configuration in central systems (DRV-3223)
- I/O interface | OPAL-RT Boards : Fixed display issue showing wrong file when fetching bitstream file information (DRVTT-1121)
- I/O interface | OPC UA Server: Added support for configuration via GUI (DRV-3393)
- I/O interface | Synchronization: Improved network interface selection using a text field instead of pre-defined list (DRV-3363)
- FPGA-Based Simulation | Added beta functionality to monitor intra-step FPGA signals with ScopeView
- FPGA-Based Simulation | Added support for spatial harmonics in PMSM
- FPGA-Based Simulation | Added support for thermal model in switches

Version 2020.1.0

- Added global preferences to specify the default system unit (SI/PU/PQ/A) per component type (HY-1693)

- Added various advanced preferences in the simulation settings (HY-2226)
- Added TrigOut observable to POW component and a mask parameter to define the pulse duration (HY-2035)
- Added handles in the UCM structure to manage solver iterations (HYMODEL-49)
- Added support for relative paths for files defined in the I/O configuration tool (HYTT-3251)
- Added new machine library models Synchronous machine (pu fundamental) and Synchronous machine (pu standard) (HYMODEL-24)
- Added new machine library models Permanent Magnet Synchronous Machine (HYMODEL-31)
- Added new protection library model 25 Synchronism-Check (HY-2238)
- Added new machine control library model PSS4B (HY-2250)
- Added several new Control Measurements and Control Miscellaneous components (HYMODEL-45)
- Added example model FACTS & HVDC | STATCOM (HY-2144)
- Added example model Protection | Out of Step Detection using PMUs (HYMODEL-16)
- Added example model Protection | Transformer differential (HYMODEL-15)
- Added example model Transportation | FPGA-Based PMSM Drive (EFS-2727)
- Improved display of parameters in mask of RLC, sources and tools when switching between 1-phase and 3-phase connection (HY-2228)
- Improved Sensor window view (HYTT-3051)
- Fixed unresponsive I/O configuration tool when host IP-address changes (HY-2066)
- Fixed various stability issues when host PC is connected to a VPN (HY-1623)
- Fixed non-persisting frequency parameter value in the load flow window when closing a design (HYTT-3245)
- Fixed synchronization of "Perform load flow and set initial conditions at simulation start" box between load flow and simulation settings views (HYTT-2747)
- Fixed display issues when the Windows preference for size of text and apps is not set to 100% (HY-1523)
- Fixed Simulink import file browser filter indicating wrong supported version range (HYTT-3268)
- Fixed base voltages of Benchmark example models HVAC_6Bus_230kV and HVAC_38Bus_735kV (HYTT-3269)
- Fixed sensor file automatic load in example model DNP3_MASTER_SLAVE (HYTT-3271)
- Fixed topology category in the netlist for Voltage Source Converters (HYTT-3228)
- Fixed Data Logger Trigger signal fields to None in ScopeView when no trigger signal is configured (RTLABTT-2402)
- Fixed issue with the auto-transformer in the load flow calculations (HYTT-3246)
- I/O interface | ABB PS935 : Added support for configuration via GUI (DRV-3330)
- I/O interface | C37.118 Master : Added option to configure local UDP port (DRV-3318)
- I/O interface | IEC 61850 : Fixed scenario when the SVID has more than 126 bytes and/or when there are more than 16 channels configured per ASDU (DRVTT-1057)
- I/O interface | IEC 61850 : Fixed import of projects created on a different host (DRVTT-934)
- I/O interface | IEC 61850 : Fixed IED and GOOSE ID auto-filling based on the SCL file (HYTT-3255)
- I/O interface | OPAL-RT Board : Added support for time-averaged digital inputs (DRV-3244)
- I/O interface | OPAL-RT Board : Added support for PWM-synchronized analog inputs (DRV-3243)
- I/O interface | OPAL-RT Board : Added support for .opbin bitstream configuration file extension (DRV-3270)
- I/O interface | OPAL-RT Board : Improved browsing of .opal/.bin/.opbin files (DRV-3294)
- I/O interface | OPAL-RT Board : Fixed random voltage output on unused analog output channels (DRVTT-1046)
- I/O interface | OPAL-RT Board : Fixed disregarded 'Initial phase' value when 'Output complementary' is checked on digital outputs (DRVTT-940)

Version 2019.3.0

- Fixed need for administrative rights to launch the HYPERSIM installer (HYTT-3163)
- Fixed issue when importing an EDD file twice in the same design (HYTT-3133)
- Fixed issue with Squirrel Cage Induction Machine when connected directly to a converter (HYTT-3069)
- Fixed Map Tasks and Task Manager interchanged in the ribbon (HYTT-3148)
- Fixed displayed angle unit to degree in load flow input data report (HYTT-3193)
- Fixed Data Logger live acquisitions where the Play and Stop buttons were simultaneously enabled (HYTT-2742)
- Added support for MATLAB R2019a and R2019b
- Added diagnostic panel in Target Manager to help fix target setup issues (HYTT-3043)
- Added GUI to edit UCM files (HY-2143)
- Added editable timeout in Simulation Settings/Advanced to manage simulation initialization and stopping sequences (HY-2158)
- Added capability to export data to CSV format in ScopeView
- Improved workflow using snapshots (HYTT-3086)
- Example Model | How To : Added example model for Load Flow (HYTT-2891)
- Example Model | Cyber-Physical : Added Cyber Security example model (HYTT-2994)
- Component Library | Added 6-Phases FD line model (HYTT-2891)
- Component Library | Added pin to access the auto-transformer tertiary for external impedance (HYTT-2908)
- Component Library | Switching Function: Added Boost converter (HYTT-2127)
- Component Library | Switching Function: Added 2-Level converter and its PWM average generator (HYTT-2127)
- Component Library | Switching Function: Added 3-Level converter and its PWM average generator (HYTT-2127)
- Component Library | Switching Function: Added Full-bridge converter and its PWM average generator (HYTT-2127)
- Component Library | Switching Device: Added 2-Level converter and its PWM generator (HYTT-2127)
- Component Library | Switching Device: Added 3-Level converter and its PWM generator (HYTT-2127)
- Component Library | Switching Device: Added Full-bridge converter and its PWM generator (HYTT-2127)

- I/O interface | TCP UDP: Added support for OPAL-RT Linux 64-bit (DRV-3106)
- I/O interface | TCP UDP: Added support for configuration via GUI (DRV-3106)
- I/O interface | IEC 61850: improved ICD file parsing when element names are duplicated (DRVTT-891)
- I/O interface | IEC 61850: Fixed validation of uniqueness of GOOSE messages done using the MAC address in combination with the AppID (DRVTT-942)
- FPGA-based simulation | Added induction machine component
- FPGA-based simulation | Added PMSM VDP machine component
- FPGA-based simulation | Improved bitstream selection workflow
- Communication Network Simulation | Improved installation workflow by automating the configuration of virtual interfaces upon installing HYPERSIM (HY-2155)

Version 2019.2.0

- Added PSS®E import capability (HY-2130)
- Added capability for communication network modeling and cyber-physical simulation using EXata CPS (HYTT-2966)
- Added new documentation server to replace PDF documentation (HY-2125)
- Added protection relay function 67 to the Control Protection Relays library (HY-2141)
- Added inverse time overcurrent functionnality to protection relay 50/51 (HY-2141)

- Added DEGOV1 model in Control Governors library (HY-2142)
- Added Preferences menu in the ribbon to set an extra timeout for simulation initialization(HYTT-3046)
- Added validation to prevent assigning two different signals on the same output (HY-2004)
- Improved licensing experience by validating the end of support date instead of the version number (HYTT-2899)
- Improved Locate selection quick link in the Netlist when working with large models to zoom in on the component
- Improved error message when starting the simulation and the CP 2-ph line has wrong parameters (HYTT-2858)
- Improved user experience when navigating across data recording files in ScopeView (HYTT-2885)
- Improved license request workflow (HYTT-3036)
- Improved data logger example model (HYTT-2734)
- Fixed line impedance displayed unit that should have been pu/km for CP and PI lines (HY-2119)
- Fixed filtering on Category in the Sensor form (HYTT-2746)
- Fixed index display for large numbers in Sensor form (HY-2074)
- Removed unsused STATE21 signals from LCC and thyristors Sensor form (HYTT-2811)
- I/O interface | Modbus Master: Added support for CentOS 64-bit
- I/O interface | Modbus Master: Added support for configuration via GUI
- I/O interface | Modbus Master: Added support for floating 32-bit registers
- I/O interface | Modbus Slave: Added support for CentOS 64-bit
- I/O interface | Modbus Slave: Added support for configuration via GUI
- I/O interface | Modbus Slave: Added support for floating 32-bit registers
- I/O interface | OPAL-RT Boards: Added support for automatic firmware validation and flashing upon starting the simulation
- FPGA-based simulation | Added support for eHSx64 solver
- FPGA-based simulation | Added support for PMSM VDQ machine
- FPGA-based simulation | Added support for AC, DC and sine wave sources
- FPGA-based simulation | Added firmware selection menu
- FPGA-based simulation | Added various features to improve user experience
- Communication Network Simulation | OPAL-RT partnered with Scalable Network Technologies to provide HYPERSIM users with the capability for communication network modeling and cyber-physical simulation on the same hardware, offering a complete real-time cyber-physical solution for the development, testing, and assessment of electrical grids with communication networks. A detailed library of cyber-attacks and cyber-defenses is also available

Version 2019.1.1

- Added new Renewable Energy example models for PVGS, FCGS, BESS and CHP
- Added an option in the ribbon to export the design in EDD format
- Added support for I/O factor with new UI-based I/O system in the sensor view
- Fixed issue with .pun file not loading in the DC line model (HYTT-2767)

Version 2019.1

- Added support for MATLAB R2018a and R2018b (HYTT-2714)
- Added data logger capability to start and stop recording while the simulation is running
- Added dynamic file management capability to the data logger
- Added load flow support to UCM (HYTT-2831)

- Added autotransformer model (HY-2106)
- Added transceiver models for voltage and current signals (HYTT-2722)
- Added point of current measurement in thyristor model (HY-2020)
- Improved default performance factor value to 20 (HYTT-2700)
- Improved workflow of the content editor with an expression analyzer (HY-1754)
- Improved workflow with snapshot by providing it directly in the main HYPERSIM ribbon (HY-1474)
- Improved workflow and fixed various issues with the Target Manager
- Fixed Advanced target settings that were not applied before simulation or saved with the model (HYTT-2632)
- Fixed missing iteration parameter in "3-winding, w/ sat + tap + dec" transformer
- Fixed API function setSensorDataPoint() (HYTT-2725)
- Fixed PT block error when using it as a network element mode (HYTT-2692)
- Fixed transformers not displayed in Base Voltage view of the netlist if neutral pin is visible (HYTT-2733)
- Fixed gcc compilation command not working (HYTT-2830)
- Fixed issue with 1-phase wideband line model (HYTT-2727)
- Fixed default value for the task mapping performance factor being too low (HYTT-2700)
- Fixed issue with driver configuration update progress bar persisting after the update is completed (HYTT-2652)
- Fixed various issues with non-persisting preferences (HYTT-2632, HYTT-1701, HYTT-2632, HYTT-2614)

- Fixed issue with lost data when changing the number of points on a saturation curve (HYTT-2581)
- Fixed wideband fitter failing to generate data (HYTT-2720)
- Fixed issue with simulation preferences being saved on Apply instead of with the model (HYTT-2709)
- Fixed R-L coupled wrong pin type that should be 3-phase only (HYTT-2664)
- Fixed network issue that could cause a time out during code generation (HYTT-2653)
- Fixed 1-phase to 3-phase connection type change not taken into account at the next Analyze (HY-1920)
- Fixed issue with UCM that could introduce a step delay in electrical component calculations
- UI: Added capability to draw diagonal signal lines
- UI: Added capability to connect a bundle input to multiple outputs (HYTT-2202)
- UI: Fixed various bundle and breakout connection issues
- UI: Fixed Advanced Find window not hiding and re-showing correctly
- UI: Fixed various issues in Edit Symbol mode
- UI: Fixed various issues in Library Maintenance
- UI: Fixed rename issue after copy/paste action
- UI: Fixed issues with Observables on subcircuits (HYTT-2803)
- UI: Fixed Parts Library disappearing when floated
- I/O interface | C37.118 Master: Added mismatch connection point if the master has more data configured than the slave (DRVTT-730)
- I/O interface | C37.118 Master: Improved data mapping using names instead of configured order (DRVTT-730)
- I/O interface | DNP3 Master: Added option to execute the driver on a dedicated core (DRV-2888)
- I/O interface | DNP3 Slave: Added option to execute the driver on a dedicated core (DRV-2888)
- I/O interface | IEC61850: Fixed GOOSE messages corruption when daName refers directly to a basic data attribute (DRVTT-734)
- I/O interface | IEC61850: Fixed cVal.mag.f data attribute parsing (DRVTT-2949)
- I/O interface | Modbus Slave: Added option to configure the initial values (DRV-2859)
- I/O interface | OPAL-RT Boards: Added Multi-System Expansion link (MuSE) support (IOSFP-208)
- I/O interface | OPAL-RT Boards: Added OP5143 support (DRV-2595)
- I/O interface | OPC-UA Server: Added support for CentOS 64-bit (DRV-2456)

Version 6.2.2.o888

- Added license migaration tools for OS license (HYTT-2629)
- Added Network Switches and Converters - DC circuit breaker (HY-1926)
- Improved protection example model Distance 21 POTT usability (HYTT-2498)
- Improved load flow report to provide an internal voltage value that considers Xd and Xq (HYTT-2773)
- Fixed Network Machines - Synch. machine (dq0-hydraulic) form: Isat and phiSat are now automatically updated (HYTT-2629)
- I/O interface | DNP3 Slave: Added example model (DRV-404)
- I/O interface | DNP3 Master: Added example model (DRV-404)
- I/O interface | Triphase: Added example model (DRV-269)
- I/O interface | C37.118 Slave: Added feature to round-up the timestamp to the nearer microsecond
- I/O interface | Synchronization: Fixed advanced parameters when synchronized by IRIG-B or 1PPS (DRVTT-555)
- I/O interface | IEC61850: Fixed ICD parser for multiple IEDs per file (DRV-2672)
- I/O interface | DNP3 Slave: Fixed the retrieval of the analog/binary event modes (DRVTT-491)

Version 6.2.1.o866

- Added FPGA-based simulation capability
- Added cloud simulation capability
- Added support for a faster and more automated mean to connect to and synchronize remote I/O over fiber optics
- Added mean to monitor signal values in the schematics while the simulation is running (HY-516)
- Added several new demos in Transmission and Distribution, How To and Benchmarks (HY-453)
- Added OS license check on linux targets (HY-2028)
- Fixed "State-space" form issue with initial conditions (HYTT-1830)
- Improved default repository used in file browsers in several cases (HY-1629)

Version 6.2.0.o835

- Added count of each and all components in the Netlist view (HY-1927)
- Added possibility to export the Netlist view to an Excel file (HY-1725)
- Added capability for the task mapper to take into account the I/O overhead time for interfaces configured with the I/O interfaces configuration tool (HY-1876)
- Added capability to edit the base voltage of all buses in a level at once via the Netlist view
- Added HYPERSIM program size on disk in Windows "Programs and Features" panel (HY-1832)
- Added text labels to clarify how to proceed after working in the I/O interfaces configuration tool (HY-1855, HY-1896)
- Added help file link for each I/O interface in the I/O interfaces configuration tool (HY-1932)
- Added support for Group Unit System and Prefix Multiplier on matrices in forms (HYTT-2034)
- Added backup file creation of the TableOut Excel file in TestView before overwriting it (HYTT-2171)
- Added colors on data point names in the sensors view to distinguish inputs and outputs (HY-1887)
- Added mean to manually initialize voltage and current values in Network RLC components (HY-1755)
- Added warning message on external control of LCC models to specify that misfiring can't be used in this mode (HYTT-2045)
- Added a diagnostic on Windows 10 to validate if the Samba v1 client is installed (HYTT-2122)
- Added X and pin buttons to manage bottom/top tables in the I/O interfaces configuration tool (HY-1909)
- Added new components "GTO + Diode" and "Thyristor + Diode" to standard library (HY-1778, HY-1907)
- Added Generation example models (HY-1934)

- Added Transmission and Distribution example models (HY-1934)
- Added Wideband line/cable fitter componant in Network Lines and Cables librairy (HYTT-2201)
- Added content comparison with previous license file before installing new target license (HY-1579)
- Added Z-based transformers current sensors for secondary and tertiary (HYTT-2402)
- Added new components "4-winding, 1-ph", "4-winding, 1-ph w/ sat" and "4-winding, 1-ph, w/ sat" to standard library (HY-453)
- Improved generic performance and usability of the I/O interfaces configuration tool (HY-1938, HY-1943, HY-1948)
- Improved license information displayed by the simulation server (HYTT-1975)
- Improved line parameters validation when comparing double values in HyperView Line tool (HYTT-966)
- Improved software stability when changing network interface or IP address, e.g. when changing from cable to WiFi or changing WiFi location (HY-1669, HY-1688, HY-1898, HY-822)
- Fixed component categories in ScopeView and the Netlist view to match the standard librairies (HY-1792)
- Fixed issue where an OPREC file opened in two different ways was treated by ScopeView as two different sources (HYTT-2198)
- Fixed TestView Hide and OK buttons in the scope window while processing (HYTT-2170)
- Fixed data logger incorrect use of the calculation step and execution time step (HY-1893)
- Fixed simulation crash when using Continuous acquisition in ScopeView (HYTT-2172)
- Fixed diode, GTO, thyristor and thyristor back-to-back forms and pins (HY-1913)
- Fixed issue in the I/O interfaces configuration tool where certain table entries were being hidden (HYTT-2291)
- Fixed wrong pin type and location in "LCC inverter oriented (avg)" (HYTT-2449)
- Fixed missing mode 3 and 4 default values in "Constant param, 4-ph" line (HYTT-2451)
- Fixed Z-based transformers current issues when using Y-ground with user-defined impedance or Y-neutral (HYTT-2462)
- Removed recordCount parameter from Datalogger interface (HYTT-2435)
- Removed "Bus to ABC" from parts library (HY-1927)
- Refactored the I/O interfaces configuration tool for better functionality
- Refactored the Netlist view for better functionality
- Refactored the Targets Manager for better functionality
- I/O interface | ABB PS935: Increased the number of analog inputs and outputs from 128 to 256 (HYTT-2374)
- I/O interface | C37.118 Master: Added support for CentOS 64-bit
- I/O interface | C37.118 Master: Broke backward compatibility with configuration via files, the I/O interfaces configuration tool must be used instead
- I/O interface | C37.118 Slave: Added support for CentOS 64-bit
- I/O interface | DNP3 Master: Added support for CentOS 64-bit
- I/O interface | DNP3 Slave: Added support for CentOS 64-bit
- I/O interface | OPAL-RT Board: Added support for configuration via GUI (HYTT-2302)
- I/O interface | Signal Generator: Added support for configuration via GUI
- I/O interface | Triphase: Added support for configuration via GUI (HYTT-2302)

Version 6.1.3.o698

- 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 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 interfaces 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)
- Decreased simulation process priority when executing on windows target to free some core processing for other processes (HYTT-1885)
- I/O interface | C37.118 Master: Added support for configuration via GUI (DRV-2108, HYTT-1926)
- I/O interface | C37.118 Master: Added example model (DRV-2237)
- I/O interface | C37.118 Slave: Added example model (DRV-2237)
- I/O interface | IEC 60870-5-104 Slave: Added example model (DRV-2237)
- I/O interface | IEC 60870-5-104 Slave: Fixed issue preventing connection of a breaker status directly to a single point output (DRVTT-226)
- I/O interface | IEC 61850: Added example model (DRV-2237)
- I/O interface | Synchronization: Added example model (DRV-2237)
- I/O interface | 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 I/O interfaces 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)
- I/O interface | C37.118 Master: Added option to run the driver on a dedicated core (DRV-2105)
- I/O interface | C37.118 Master: Added support for real-time simulation on Windows (DRV-2114)
- I/O interface | C37.118 Master: Fixed timeout when stopping the simulation (DRV-2172)
- I/O interface | C37.118 Slave: Added support for real-time simulation on Windows (DRV-2114)
- I/O interface | C37.118 Slave: Fixed issue with 50 Hz nominal frequency being overridden with 60 Hz (DRVTT-206)
- I/O interface | C37.118 Slave: Fixed binding with a specific network interface (DRV-2154)
- I/O interface | C37.118 Slave: Fixed use of loopback and wlan network interfaces (DRV-2158)
- I/O interface | IEC 60870-5-104 Slave: Added support for configuration via GUI (DRV-2094)
- I/O interface | IEC 60870-5-104 Slave: Fixed data update when no RMS values were configured on floating inputs (DRVTT-213)
- I/O interface | IEC 61850: Added support for real-time simulation on Windows (DRV-2128)
- I/O interface | IEC 61850: Added option to retrieve both simulation flag and test bit (DRV-2129)
- I/O interface | IEC 61850: Added option to enable all Sampled Values and GOOSE transmission/reception by default at the beginning of the simulation (DRV-2129)
- I/O interface | IEC 61850: Added support for fixed-length encoding of GOOSE messages as per IEC 61850-8-1 Ed.2 A.3 (DRV-2129)

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)
- I/O interface | C37.118 Master: Added support for configuration via GUI
- I/O interface | C37.118 Slave: Added support for RTA simulation mode in Windows
- I/O interface | C37.118 Slave: Added timestamp initialization to system time when using local synchronization source
- I/O interface | IEC 61850: Added support for CentOS 64-bit
- I/O interface | IEC 61850: Added support for configuration via GUI
- I/O interface | IEC 61850: Added support for simulation bit
- I/O interface | IEC 61850: Fixed order of data attributes in GOOSE messages

- I/O interface | IEC 61850: Improved timing precision when transmission is synchronized by Oregano card

- I/O interface | Synchronization: Added support for configuration via GUI
- I/O interface | 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 interfaces configuration tool (HYTT-1590)
- Added capability to remember window size in sensor view and set Data Logger as the default view (HY-1705)
- Added new license version. A new license file is required with version 6.1
- Improved I/O interfaces 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 issue occurring in Selected Summary window after a data point is renamed (HYTT-1520)
- I/O interface | IEC 61850: Added support for configuration through the I/O interfaces configuration tool
- I/O interface | IEC 62056 master: Fixed documentation (HYTT-1477)

Version 6.1.0.602

- Added I/O mode validation, no need to set the I/O sequencing (sendMode) for OPAL-RT Boards 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 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 interfaces configuration tool to set the I/O sequencing (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)
- I/O interface | IEC 61850: Added capability to manipulate the data integrity (loss of data, duplication, delay and more) of Sampled Values streams (HY-1622)
- I/O interface | IEC 61850: Added "IEC 61850 data integrity" component to Control Power Tools library (HY-1622)

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)
- 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)
- I/O interface | IEC 60870-5-104 Slave: Improved performance (HYTT-1407)

Version 6.1.0.557

- Added I/O interfaces 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 [OPAL-RT Boards] (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 EDD importation when unit contains a space character (HYTT-1185)
- Removed device "Decoupling transformer" from library (HYTT-1225)
- I/O interface | IEC 60870-5-104 Slave: Fixed random disconnection of TCP communication

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 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 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 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)
- I/O interface | DNP3 Master: Fixed binding of specific Ethernet interface
- I/O interface | DNP3 Master: Fixed core assignment of asynchronous computation
- I/O interface | IEC 61850: Added support for 256 Samples Per Cycle with IEC 61850-9-2LE
- I/O interface | IEC 61869-9: Added support of new I/O interface

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 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 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 view 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 view 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)
- I/O interface | DNP3 Master: Added support of new I/O interface
- I/O interface | IEC-60870-5-104 slave: Added support for CentOS 64-bit
- I/O interface | IEC-60870-5-104 slave: Fixed transmission and reception of non-floating data types

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 OPAL-RT Boards 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 window (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 view
- 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 GUI
- 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 OPAL-RT Boards (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 GUI 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)