GitHub issues resolved for v4.1.0

As part of this release 523 issues (including 374 pull requests (PR)) were closed.

–MSL-general–

Documentation

- #3552 (PR) Add division tag around image tags
- #3673 (PR) Update DLR contact address
- #3745 (PR) Update DLR contact link
- #4136 (PR) Unify spelling of controllers
- #4196 (PR) Fix and add ITEA links
- #4208 (PR) Bump used Modelica language version to 3.6

Miscellaneous

- #3639 (PR) Fix missing include in Common.c (CI)
- #3642 (PR) Include provided header files (CI)
- #3643 (PR) Fix and extend table tests (CI)
- #3681 (PR) Handle redirect errors in URL checker (CI)
- #3709 (PR) Utilize GitHub Actions for CI
- #3723 (PR) Check Modelica files for UTF-8 BOM (CI)
- #3805 (PR) Update CI to check for deprecated Text.lineColor annotation
- #3809 (PR) Fix exception where tag HTML was not in lower case (CI)
- #3814 Unify spelling of controllers
- #3851 (PR) Update tidy-html5 (CI)
- #3886 (PR) Generate MSL Release Notes by GitHub Actions (CI)
- #3899 (PR) Run spelling check via GitHub Actions (CI)
- #3952 (PR) Update icons almost automatically updated to have correct gradient
- #3972 (PR) Add problem matchers for GitHub Actions (CI)
- #4072 Near-zero coordinates in graphical annotations
- #4140 (PR) Clean-up of near-zero coordinates in graphical annotations
- #4165 (PR) Fix codespell exceptions (CI)
- #4175 Which Modelica Language version for MSL 4.1.0?
- #4181 (PR) Update text annotations to not use deprecated features
- #4183 (PR) Fix regex to optionally ignore quoted strings when checking for deprecated Text.lineColor annotation (CI)
- #4203 (PR) Fix codespell exceptions (CI)
- #4247 (PR) Update version, uses annotation and copyright year
- #4357 (PR) Update icon color of red dot
- #4434 (PR) Bump actions to avoid deprecation warnings (CI)

Blocks

Bugs

- #3627 (PR) Blocks.Routing.Extractor: add assert for input range
- #3878 Unit-checking using Gain and LimIntegrator-blocks
- #4045 (PR) Fix startTime of (SignalPWM) -> ZeroOrderHold
- #4189 (PR) Avoid having both start-value and initial equation
- #4345 (PR) Consider shiftTime for verbose extrapolation in CombiTimeTable

Enhancements

- #3548 Avoid unnecessary discontinuities in sources (Cosine, Sinc)?
- #3691 (PR) Add reading of CSV files from ModelicaTableAdditions to ModelicaStandardTables
- #3692 (PR) Add tableOnFile parameter to icon of CombiTable blocks
- #3762 (PR) Add a block (based on time events) to calculate the extrema of a signal
- #3806 (PR) Missing initialization of Blocks.Math.Mean and derived blocks
- #3831 (PR) Implement ImpulseSources
- #3864 Undesired minimum gain of LimPID
- #3985 (PR) Add assert condition block
- #4006 (PR) Add new power block for raising an input to a user parameterized exponent
- #4015 (PR) Implement continuous version of SignalExtrema
- #4065 Unnecessary potential state events in Modelica.Blocks.Sources.Pulse
- #4066 (PR) Replace state events by time events
- #4291 (PR) Add the very first figure annotation

Examples

- #3727 Value of motor.uniformNoise.localSeed in ActuatorWithNoise
- #4094 (PR) Add a first figure to Modelica.Blocks.Examples.PID_Controller
- #4433 (PR) Fix typos

Documentation

- #3595 (PR) Precising the description of u1 and u2 in Division block
- #3683 (PR) Document matrix name syntax for table text files
- #3975 (PR) Update wrapAngle.mo

Miscellaneous

- #3720 (PR) Remove superfluous zeros from coordinates of CombiTable block icons

- #3881 (PR) Revert major part of #227, and remove unit from gain parameter of Modelica.Blocks.Continuous.* blocks and Modelica.Blocks.Math.Gain
- #3893 (PR) Consider the derivatives at boundaries in the 2D-table
- #3906 Issues with Modelica.Blocks.Math.ContinuousMean
- #3986 (PR) Do not preserveAspectRatio for terminate-block
- #4027 (PR) Remove discrete input
- #4035 startTime of (SignalPWM) -> ZeroOrderHold
- #4055 (PR) Propose better unit-handling in equation for LogSweep
- #4118 (PR) Remove min attribute of gain in Blocks.Continuous.LimPID
- #4122 (PR) Remove plural 's' in 'height of ramps'
- #4150 (PR) Avoid discontinuities
- #4151 (PR) Simpler mean
- #4180 Remove deprecated Text.color attribute from graphical annotations
- #4188 (PR) Fix unit errors in ExternalCombiTimeTable constructor
- #4220 (PR) Remove real relation in non-discrete-time controlled if-statement
- #4414 Finding minimum and maximum values over time

C-Sources

Bugs

- #3556 MinGW possibly neglected in safe-math.h
- #3562 Error message for out of bounds column in tables is broken
- #3563 (PR) Fix invalid memory access in isValidCombiTimeTable and isValidCombiTable1D
- #3568 (PR) Do not include intsafe.h on MinGW
- #3660 Modelica.Utilities.Files.createDirectory fails if the directory does not exist
- #3663 (PR) Add getcwd fallback in ModelicaInternal_fullPathName
- #3669 (PR) Fix reading file with EOL=LF on Windows
- #3894 Derivative signal of combiTable2Ds is set to zero outside of table with HoldLastPoint
- #3896 (PR) Fix derivatives in 2D-table for one-sided extrapolation by constant continuation
- #3983 (PR) Fix index-out-of-bounds exception for splines
- #4301 Cannot compile library due to _BSD_SOURCE wrong usage

Enhancements

- #3603 Memory allocation error in CombiTimeTable when given UTF16 LE file
- #3604 (PR) ModelicaIO.c: Improve error message if reading text file containing zero bytes
- #3686 (PR) Add ModelicaDuplicateString and ModelicaDuplicateStringWithErrorReturn (introduced in Modelica 3.5)

- #3691 (PR) Add reading of CSV files from ModelicaTableAdditions to ModelicaStandardTables
- #3700 (PR) Make array inputs of external C functions const (introduced in Modelica 3.5)
- #3839 External ModelicaStandardTables lack const qualifiers for array inputs (Modelica Language Specification version 3.5)

Miscellaneous

- #3246 (PR) Remove call of localtime
- #3564 Unguarded clang pragmas in ModelicaStrings.c
- #3565 (PR) Add pragma guards in ModelicaStrings.c
- #3647 Linker warning mktemp is dangerous
- #3696 (PR) Fix some compiler warnings
- #3728 (PR) Fix Modelica.Utilities.Strings.hashString to always use provided HASH_AP and update 3rd-party header uthash to v2.3.0
- #3783 (PR) Remove unused static function get_token
- #3784 (PR) Fix LCC build
- #3787 (PR) Fix C89 compliance
- #3861 (PR) Fix -Wundef warning by first checking if macro is defined
- #3867 Is ModelicaUtilities.h tool-specific?
- #3893 (PR) Consider the derivatives at boundaries in the 2D-table
- #3903 Modelica.Blocks.Tables: Wrong format specifier is ignored
- #3905 (PR) ModelicaIO.c: Fix error handling for invalid format specifier in text file
- #4281 (PR) Upgrade zlib to v1.3.1
- #4487 (PR) Restore and modernize ModelicaUtilities.h
- #4489 Update matio for MSL 4.1.0
- #4530 (PR) Fix feature check macros for POSIX realpath
- #4531 (PR) Update matio library to 1.5.28

Clocked

Examples

- #4458 ClockedWithDiscretizedContinuousController has clocked variable in initial equation

Documentation

- #4299 (PR) Clarify the Clocks chapter of Modelica.Clocked User Guide

Miscellaneous

- #3801 (PR) Remove duplicate "and" in doc string
- #3971 Clocked noise example modifying something not in constraining class

- #4070 Unused parameters in Modelica.Clocked.ClockSignals.Clocks.Logical
- #4071 (PR) Propagate useSolver to these variants as well
- #4074 (PR) Fix for #3971

Complex*

Bugs

- #1260 Complex.scalarProduct not a scalar product
- #3651 Complex transfer function block uses wrong order of coefficients
- #3733 (PR) Fix interpretation of coefficients of complex transfer function
- #3742 (PR) Fix implementation of scalarProduct
- #4239 (PR) Simplify ComplexRampPhasor

Enhancements

- #3584 (PR) Smooth complex

Documentation

- #3659 (PR) Mark ComplexBlocks and FundamentalWave with DocumentationClass

Miscellaneous

- #3638 (PR) Use one character instead of line drawings
- #3677 (PR) Do not fail for w<=0 in Complex TransferFunction
- #3768 Conversion from ModelicaServices and Complex version 3.2.3 to 4.0.0?
- #3770 (PR) Add missing conversions for Complex and Services 3.2.3
- #4264 (PR) Set unit instead of having it in description
- #4452 (PR) AdditionalSqrt

Constants

Bugs

- #2056 Proper definition of Modelica.Constants.{eps,small}
- #4042 (PR) Give a proper definition of machine constants.

Miscellaneous

- #3295 Unit of permeability
- #3811 (PR) Change unit of permeability to V.s/(A.m)
- #4155 (PR) Add units to mathematical constants

Electrical.Analog

Bugs

- #3827 (PR) Fix M_Oline.segment as discussed in #3826
- #3828 (PR) Fix initialization of Lines as discussed in #3826

Enhancements

- #3748 Inconsistent M_OLine
- #3830 (PR) Unify Lines models
- #3831 (PR) Implement ImpulseSources
- #3833 (PR) Improvements to line models
- #3904 DC PowerSupply missing
- #3926 (PR) Implement and test PowerSupply

Examples

- #3590 (PR) Change homotopy parameter to be consistent
- #3625 (PR) Wrong StopTime for DifferenceAmplifier
- #3819 (PR) Lines examples
- #4020 This looks like a typo in the description?
- #4025 (PR) #4020 This looks like a typo in the description?
- #4206 (PR) Remove redundant diagram text from Analog examples (second attempt)
- #4245 Connect(p, p) in Modelica.Electrical.Analog.Examples.Utilities.SwitchedCapacitor?
- #4261 (PR) Remove self-connect
- #4558 Shorten reference results for Chua circuit model

Documentation

- #3815 (PR) Fix inconsistent M_OLine model
- #3960 Documentation image M_OLine error

Miscellaneous

- #3961 (PR) Remove outdated unused image files
- #3987 (PR) Set Evaluate = true for IdealTransformer.considerMagnetization
- #4119 (PR) Fix unit error in Thyristor
- #4147 (PR) Fix annotations

Electrical.Batteries

Bugs

- #3878 Unit-checking using Gain and LimIntegrator-blocks
- #3901 Possible bug in Modelica.Electrical.Batteries.Utilities.PulseSeries
- #3902 (PR) Electrical.Batteries.Utilities.PulseSeries

Examples

- #4098 Unit error in Modelica.Electrical.Batteries.Examples.BatteryDischargeCharge
- #4112 (PR) Fix unit error in CCCVcharging

Documentation

- #3804 (PR) Fix/remove dead links

Electrical.Digital

Examples

- #4174 Unused parameters in Modelica.Electrical.Digital.Examples.Utilities.DFF
- #4176 (PR) Fix (and rename) parameters of Modelica.Electrical.Digital.Examples.Utilities.DFF

Electrical.Machines

Bugs

- #4158 (PR) Remove unit-casting
- #4402 mBasic in functions in Modelica.Electrical.Polyphase.Functions
- #4444 (PR) Remove parameter keyword in functions

Enhancements

- #3786 (PR) Rotational coupling
- #3920 (PR) Liberate machine parameter m
- #4052 (PR) Fix SI units by introducing reference phase impedance ZsRef

Examples

- #3816 Remove Modelica.Electrical.Machines.Examples.ControlledDCDrives.Utilities.Battery
- #4011 (PR) Remove battery model from examples
- #4363 MSL 4.1.0 Reference results Modelica.Electrical.Machines.Examples.SynchronousMachines.SMPM_I
- #4565 (PR) Update Electrical.Machines/Examples/SynchronousMachines/SMPM_NoLoad/comparisonSig
- #4579 (PR) Apply same patch with Ron and Goff
- #4582 (PR) Apply same patch as #4559 to Electrical.Machines

Documentation

- #3937 Dead Modelica URI link in documentation
- #3939 (PR) Remove commented Modelica URI link in documentation
  with list

Miscellaneous

- #3472 Remove reference signals of zero sequence currents of electric machine examples

- #3622 Unused parameter in function
- #3623 (PR) Remove unused code (#3622)
- #3951 Missing gradient colors in some Icons
- #4030 Bug in a component: Modelica.Electrical.Machines.Sensors.HallSensor
- #4031 (PR) Fix HallSensor
- #4517 Modelica.Electrical.Machines.Examples.InductionMachines.IMC_InverterDrive is numerically fragile?

Electrical.Polyphase

Bugs

- #3963 Parameter T not considered in Polyphase Resistors and Conductors
- #3964 (PR) Propagate parameter T in Polyphase Resistors and Conductors
- #4402 mBasic in functions in Modelica.Electrical.Polyphase.Functions
- #4444 (PR) Remove parameter keyword in functions

Electrical.PowerConverters

Bugs

- #3626 (PR) Correct a bug in Modelica.Electrical.PowerConverters.DCAC.Control.SVPWM
- #3897 (PR) PowerConverters.DCDC.HBridge
- #3910 (PR) Fix parameter propagation of IntersectivePWM

Enhancements

- #3679 (PR) Implement choice between sawtooth and triangle reference signal in PowerConverters/DCDC/Control/SignalPWM
- #3774 (PR) Add ChopperBuckBoost to PowerConverters
- #3895 Fire signals of H-Bridge

Examples

- #3523 Jumps in signal at very tiny time intervals in PolyphaseTwoLevel_RL reference results

Documentation

- #3682 (PR) Update link in documentation to no longer rely on Freescience.info
- #3842 (PR) Fix permanent link redirect

Miscellaneous

- #3887 Inadequate handling of geometric corner case in PowerConverters.DCAC.Control.SVPWM
- #3888 (PR) Update block descriptions of control blocks

- #3892 (PR) Avoid values out of bound, and simplify logic in PowerConverters.DCAC.Control.SVPWM
- #4035 startTime of (SignalPWM) -> ZeroOrderHold
- #4054 Model issues detected by unit checking ThreePhaseTwoLevel_PWM
- #4152 (PR) Correct start-value for t0 in ThreePhaseTwoLevel

Electrical.QuasiStatic

Bugs

- #4022 (PR) Remove duplicate definition of m

Enhancements

- #3697 (PR) Quasi-static Transformer
- #3705 (PR) Add the connection indicator to the terminal box icon
- #3865 Why are there no single phase quasistatic RMS voltage and current sensors?
- #3876 (PR) Add QuasiRMS voltage and current single-phase sensors

Examples

- #4356 (PR) Update MultipleResonance.mo

Documentation

- #3873 Documentation mentions Quasi-static AC machine models not being available
- #3874 (PR) Update documentation of quasi-static AC machines
- #3938 (PR) Strip leading newline in img.alt attributes

Miscellaneous

- #4021 Duplicate non-identical component in Modelica.Electrical.QuasiStatic.Polyphase.Sources.FrequencyS
- #4264 (PR) Set unit instead of having it in description

Electrical.Spice3

Documentation

- #3676 (PR) Remove repeated advice on package Internal (previously called Repository)

Miscellaneous

- #3576 Rewrite if Boolean == true then
- #3812 (PR) Simplify "if Boolean == true" to "if Boolean"
- #4135 (PR) Delete redundant points of polygon annotation of connectors

Fluid

Bugs

- #3758 Jump in Modelica.Fluid.Pipes.BaseClasses.WallFriction.LaminarAndQuadraticTurbulent.massFlowF
- #3924 (PR) Fix the bad Evaluate annotation
- #3944 Bug in the SharpEdgedOrifice for Loss factors
- #3953 Wrong enthalpies calculated by DynamicPipe
- #3959 (PR) Fix Wb_flows discretization terms for DynamicPipe
- #4128 Investigating regfun3
- #4144 Dimension mismatch in function linearPower
- #4157 (PR) If the limits don't make sense use linear interpolation in Modelica.Fluid.Utilities.regfun3
- #4258 (PR) Bug in SharpEdgedOrifice for Loss factors resolved
- #4259 (PR) Fix dimension error of Modelica.Fluid.Machines.BaseClasses.PumpCharacteristics.linearPower
- #4526 Problems with ModelicaTest.Fluid.TestComponents.Vessels.TestSimpleTank
- #4545 (PR) Avoid the tank to ever become completely empty

Examples

- #3654 (PR) Remove unused/undocumented block setReal from example
- #3656 The reference solution of Modelica.Fluid.Examples.Explanatory.MomentumBalanceFittings is wrong
- #3657 (PR) Add start value to ensure convergence to the right flow in suddenExpansion1
- #3779 (PR) choicesAllMatching=true is the correct annotation!
- #3782 What is the quality of the TankWithEmptyingPipe1 reference result?
- #3813 (PR) Decrease solver tolerance of Modelica.Fluid.Examples.AST_BatchPlant.Test.TankWithEmptyi
- #4032 (PR) The dT is a temperature difference
- #4033 (PR) Reduce guess for initial temperature difference across wall
- #4312 Modelica.Fluid.Examples.TraceSubstances.RoomCO2WithControls is problematic because of chattering

Documentation

- #3629 (PR) Fix outdated contact
- #3715 (PR) Remove superfluous blank line in documentation of Modelica.Fluid.UsersGuide.ComponentDefinition.WallFriction
- #3863 (PR) Add missing parenthesis in fluid user guide page
- #4435 (PR) Fix links

Miscellaneous

- #3649 (PR) Just use "redeclare" instead of "redeclare final"
- #3760 (PR) Fix assert message of Modelica.Fluid.Pipes.BaseClasses.WallFriction.NoFriction.massFlowRate
- #3802 (PR) State temperatures in PartialHeatTransfer declared as Medium-specific type

- #3951 Missing gradient colors in some Icons
- #4104 (PR) Remove modification of 'quantity' for FixedBoundary.X
- #4469 (PR) MassFlowSource_T and MassFlowSource_h only work if there is at least one port
- #4533 (PR) Fix #4312
- #4568 (PR) Fix for #4548

Fluid.Dissipation

Bugs

- #4580 (PR) Fix wrong expression for the a = 0, b > 0 case

Enhancements

- #1429 Conditionally uninitialized output variable Re in Modelica.Fluid.Dissipation.HeatTransfer.HeatExchanger.kc_flatTube used

Miscellaneous

- #3743 (PR) Resort variable declarations of Modelica.Fluid.Dissipation.HeatTransfer.HeatExchanger.{kc_fla kc_flatTube_KC, kc_roundTube_KC} such that they are declared before used
- #3744 (PR) Add assertion in else branches of Modelica.Fluid.Dissipation.HeatTransfer.HeatExchanger.{kc_kc_flatTube_KC, kc_roundTube, kc_roundTube_KC}
- #4147 (PR) Fix annotations

Icons

Miscellaneous

- #3632 (PR) Render borders
- #4135 (PR) Delete redundant points of polygon annotation of connectors

Magnetic.FluxTubes

Bugs

- #4158 (PR) Remove unit-casting
- #4567 (PR) Correct Magnetic.FluxTubes.Material.HysteresisTableData.M400_50A.sigma

Enhancements

- #3993 (PR) FluxTubes: some improvements in shapes and material

Examples

- #4077 Unit error in Modelica.Magnetic.FluxTubes.Examples.MovingCoilActuator.ArmatureStroke
- #4109 (PR) Fix unit errors in ArmatureStroke

Documentation

- #3847 (PR) Fix link
- #4211 (PR) Fix broken link in Modelica.Magnetic.FluxTubes
- #4435 (PR) Fix links

Miscellaneous

- #3295 Unit of permeability
- #3951 Missing gradient colors in some Icons
- #4007 Redundant connect equation in ConstantActuator
- #4008 (PR) Remove redundant connect equation in ConstantActuator

Magnetic.FundamentalWave

Bugs

- #4158 (PR) Remove unit-casting
- #4172 (PR) Protect internal ports of base class machines

Enhancements

- #3817 (PR) Implement split of stray inductance in common and individual part

Examples

- #3822 (PR) Add documentation of SinglePhaseInductance
- #4570 (PR) Attempt to fix #4559 by increasing RonDiode and GoffDiode

Documentation

- #3736 (PR) More clearly specify damper cage in synchronous machine models

Miscellaneous

- #3472 Remove reference signals of zero sequence currents of electric machine examples
- #4187 (PR) Remove newlines at end of Text primitive

Magnetic.QuasiStatic

Bugs

- #3997 (PR) Propagate the angle alpha also in the calculation of A in HollowCylinderRadialFlux
- #4158 (PR) Remove unit-casting
- #4172 (PR) Protect internal ports of base class machines

Enhancements

- #3993 (PR) FluxTubes: some improvements in shapes and material

Examples

- #3592 (PR) Fix name of plot variable in documentation
- #3803 (PR) Add an example to demonstrate ideal field weakening
- #3845 (PR) QuasiStatic example induction machine with inverter
- #4337 MSL 4.1.0 Regressions - Magnetic.QuasiStatic

Documentation

- #3593 Check documentation of induction machines' examples
- #3659 (PR) Mark ComplexBlocks and FundamentalWave with DocumentationClass
- #3736 (PR) More clearly specify damper cage in synchronous machine models
- #3823 (PR) Remove obsolete "(quasi-static)" from documentation

Miscellaneous

- #3472 Remove reference signals of zero sequence currents of electric machine examples
- #3620 (PR) Refs #3593: Fix documentation of quasi-static machine examples

Math

Bugs

- #3836 Incorrect results from isPowerOf2 for large inputs
- #3850 (PR) Avoid max({}) in Modelica.Math.Matrices.nullSpace

Enhancements

- #3919 (PR) Use boolean array reductions

Examples

- #4344 (PR) Math asserts
- #4470 (PR) Math asserts (#4344)

Documentation

- #4435 (PR) Fix links
- #4448 (PR) Fix minor documentation error for Modelica.Math.log

Miscellaneous

- #3578 Order Modelica.Math.Matrices.LAPACK
- #3602 (PR) Reorder Lapack functions in alphabetic order
- #3703 (PR) Avoid deprecated "builtin" external language for common mathematical functions
- #3843 (PR) Fully integer based version of isPowerOf2
- #3849 Invalid function Modelica.Math.Matrices.nullSpace calculating max({})
- #4036 Illegal value of 'lwork' in LAPACK.dtrsen
- #4039 (PR) Most LAPACK routines don't want lwork=0 and/or work with size zero
- #4232 Mismatching order in package.order
- #4314 (PR) Compatibility fix for Dymola 2024x; not needed in coming release.

Mechanics.MultiBody

Bugs

- #3588 Quaternions.from_T returns error for valid matrix
- #3710 Singular Jacobian of the initial equations for the rotational constraint in Modelica.Mechanics.MultiBody.Joints.Constraints.Prismatic
- #3718 (PR) Correct Constraints.Prismatic
- #3724 (PR) Stable calculation of quaternion from transformation matrix
- #3989 ForceAndTorque model does not set color of force arrow
- #3990 (PR) Pass forceColor to arrow visualizer
- #4145 Error with frame_resolve math in BasicAbsoluteAngularVelocity sensor
- #4148 (PR) Fix false calculation of w (omega) when resolveInFrame == frame_resolve

Enhancements

- #3859 (PR) Fix missing or ambiguous SI-units in MultiBody.Sensors
- #3908 Late inlining of Modelica.Mechanics.MultiBody.Frames.Internal.maxWithoutEvent
- #4133 (PR) Replace 'Inline=false' with late inlining

Examples

- #3706 Wrongly fixed initial conditions in example Modelica.Mechanics.MultiBody.Examples.Constraints.Pr
- #3712 (PR) Initialize motion in x direction (r_rel_a_1) instead of in z (r_rel_a_3)
- #3776 Link rot
- #3866 startBackward and startForward should not be reference results
- #3870 (PR) Remove startBackward and startForward from reference results

- #4080 Unit error in Modelica.Mechanics.MultiBody.Examples.Loops.Utilities.GasForce2
- #4081 (PR) Delete variables dens and R_air from Modelica.Mechanics.MultiBody.Examples.Loops.Utilities
- #4108 (PR) Fix unit error in RobotR3.OneAxis

Documentation

- #3610 shapeType documentation example for file:// is inconsistent with standard file URIs
- #3613 (PR) Add missing URI separator in file URIs
- #3804 (PR) Fix/remove dead links
- #3933 (PR) Update documentation of Modelica.Mechanics.MultiBody.Visualizers.Advanced
- #4184 (PR) Restore documentation of Modelica.Mechanics.MultiBody.Visualizers.Internal.Lines
- #4217 (PR) Documentation: clarify mind-set of planar rotation

Miscellaneous

- #2474 Spherical, etc. render poorly on non-white backgrounds
- #3445 Wrong rotation direction in planarRotation functions
- #3634 (PR) Utilize ellipses' closure
- #3716 (PR) Improve icons of joint assemblies RRR and RRP
- #3725 (PR) Simplify selection of constraint equations to be used
- #3729 (PR) Fix position of component's and parameter's name according to icon conventions
- #3730 (PR) Use ellipses instead of arcs by lines in Mechanics.MultiBody.Forces
- #3835 (PR) Remove Evaluate=true for fixed=false parameter 'n_b'
- #3932 (PR) Remove superfluous import statements for Modelica.Units.Conversions.to_unit1
- #4147 (PR) Fix annotations
- #4171 (PR) Initialize output array C even when multiColoredSurface=false
- #4192 Unit errors when calling Modelica.Mechanics.MultiBody.Frames.from_nxy
- #4194 (PR) Correct units for normalizing vectors.
- #4246 Unused ndim in MBS World
- #4248 (PR) Use vector for visualization of physical quantities
- #4266 (PR) Delete unused protected parameters ndim, ndim2 and ndim_pointGravity
- #4445 (PR) Add unit="1" to quaternions
- #4520 (PR) Make propagation final of lifted parameters in Spring

Mechanics.Rotational

Enhancements

- #3661 Improve table design of Modelica.Mechanics.Rotational.Components.Clutch to use static tables instead of dynamic
- #3662 (PR) Enhance frictional models based on ExternalCombiTable1D

- #3702 (PR) Rotational and translational inverse speed dependent torque/force
- #3786 (PR) Rotational coupling
- #3976 (PR) Eddy current sources

Examples

- #3866 startBackward and startForward should not be reference results
- #3870 (PR) Remove startBackward and startForward from reference results
- #4010 (PR) Minor fixes of the documentation of Mechanics.Rotational.Examples

Documentation

- #1493 Mechanics.Rotational.Interfaces.PartialFriction.w_small
- #3594 (PR) Fix wrong or missing documentation
- #3633 (PR) Describe the effect of w_small in friction elements
- #3862 (PR) Improve documentation of both rotational and translational sensors

Miscellaneous

- #3735 (PR) Use ellipses instead of arcs by lines
- #4204 (PR) Use mustBeConnected annotation (introduced in Modelica 3.6)
- #4256 (PR) Fix position prescribed friction

Mechanics.Translational

Enhancements

- #3664 Improve design of frictional translational components to use static tables instead of dynamic
- #3690 (PR) Enhance frictional translational models based on External-CombiTable1D
- #3702 (PR) Rotational and translational inverse speed dependent torque/force
- #3976 (PR) Eddy current sources

Examples

- #3866 startBackward and startForward should not be reference results
- #3870 (PR) Remove startBackward and startForward from reference results

Documentation

- #3594 (PR) Fix wrong or missing documentation

- #3862 (PR) Improve documentation of both rotational and translational sensors
- #3942 (PR) Fix copy/paste error in description of Translational.Sources.Force2

Miscellaneous

- #4197 Unit issue in Modelica.Mechanics.Translational.Components.ElastoGap
- #4200 (PR) Improve ElastoGap
- #4204 (PR) Use mustBeConnected annotation (introduced in Modelica 3.6)
- #4256 (PR) Fix position prescribed friction

Media

Bugs

- #3666 ReferenceMoistAir, substances mass conservation issue
- #3695 Trajectory of 'k' in R134a_setState_pTX doesn't look suitable for comparison
- #3704 (PR) Change Modelica.Media.R134a.R134a_ph.dofpT (#3695)
- #3834 (PR) Correct error in function Modelica.Media.Air.ReferenceMoistAir.Utilities.pd_pTX_der
- #4389 Wrong input type in specificEnthalpy_pTX, temperature_phX, and density_phX
- #4428 ModelicaTest.Media.TestOnly.WaterIF97_dewEnthalpy uses partial package
- #4512 Issue with ReferenceMoistAir Beyond 500°C
- #4546 (PR) Fix Utilities functions of ReferenceMoistAir to also work with Xi

Examples

- #4099 Unit error in Modelica.Media.Examples.SimpleLiquidWater
- #4115 (PR) Fix unit errors in Examples.MoistAir

Documentation

- #3629 (PR) Fix outdated contact
- #4084 (PR) Documentation: improve indentation of HTML code

Miscellaneous

- #3576 Rewrite if Boolean == true then
- #3650 Modelica Media Interface is information incomplete w.r.t. independent mass fractions
- #3652 (PR) Fix descriptions and improve documentation style
- #3763 (PR) Make constants in functions protected
- #3766 (PR) Update FluidData.mo

- #3812 (PR) Simplify "if Boolean == true" to "if Boolean"
- #3885 (PR) Refactor spliceFunction_der
- #4038 (PR) spliceFunction_der check limits
- #4096 (PR) Fix unit error in SimpleAir
- #4100 (PR) Use plain SI.Mass instead of medium-based 'quantity' for MixtureGases.m1 and MixtureGases.m2
- #4103 (PR) Fix unit error in SimpleLiquidWater model
- #4116 (PR) Fix unit errors in ReferenceAir.MoistAir
- #4117 (PR) Fix unit error in IdealGasH2O
- #4232 Mismatching order in package.order
- #4233 Old value for universal gas constant used for calculation of specific gas constant
- #4238 (PR) R_s for each ideal gas record now calculated with R_NASA
- #4243 (PR) Add massFraction function to Media library
- #4262 (PR) Utilize PressureSlope unit in Media consistently
- #4452 (PR) AdditionalSqrt
- #4453 (PR) Fix dimension errors in functions of Modelica.Media.Interfaces.PartialSimpleMedium
- #4462 (PR) Make type explicit
- #4541 (PR) Generate events in functions to avoid non-discrete booleans

ModelicaReference

Documentation

- #3773 getInstanceName and spatialDistribution not listed in ModelicaReference
- #3808 (PR) getInstanceName and spatialDistribution not listed in ModelicaReference
- #3980 (PR) Fix variable name
- #4023 Obsolete form of noDerivative in ModelicaReference
- #4024 (PR) Update obsolete form of noDerivative in ModelicaReference
- #4127 (PR) Type cast result of malloc
- #4298 (PR) Fix syntax errors in ModelicaReference documentation snippets

Miscellaneous

- #3923 (PR) Fix misspelled file name

ModelicaServices

Miscellaneous

- #3768 Conversion from ModelicaServices and Complex version 3.2.3 to 4.0.0?
- #3770 (PR) Add missing conversions for Complex and Services 3.2.3

ModelicaTest

Bugs

- #3695 Trajectory of 'k' in R134a_setState_pTX doesn't look suitable for comparison
- #4428 ModelicaTest.Media.TestOnly.WaterIF97_dewEnthalpy uses partial package
- #4437 (PR) Fix illegal ModelicaTest.Media.TestOnly.WaterIF97_dewEnthalpy
- #4526 Problems with ModelicaTest.Fluid.TestComponents.Vessels.TestSimpleTank

Enhancements

- #3689 (PR) Add 2 more test examples to ModelicaTest.Electrical.Machines

Examples

- #3866 startBackward and startForward should not be reference results
- #3870 (PR) Remove startBackward and startForward from reference results

Miscellaneous

- #3778 Reference result degradation for TestValvesCompressibleReverse (fixed by Dymola 2022)
- #3852 Invalid models ModelicaTest.Media.TestsWithFluids.MediaTestModels.*
- #3881 (PR) Revert major part of #227, and remove unit from gain parameter of Modelica.Blocks.Continuous.* blocks and Modelica.Blocks.Math.Gain
- #3918 (PR) Update ModelicaTest/Media.mo: Reduce dp_nominal in TestsWithFluid.Components.PartialTestModel by a factor of 1000
- #4114 (PR) Fix unit error in TestOnly.MoistAir, R134a_setState_pTX and WaterIF97_dewEnthalpy
- #4195 (PR) Add all defined outputs of the test example to reference signals
- #4229 (PR) Add ZeroThresholds test in Blocks
- #4273 (PR) Utilize PressureSlope unit in ModelicaTest consistently
- #4349 MSL 4.1.0 Reference results for new models
- #4367 Too few variables tested for ModelicaTest.Media.TestsWithFluid.MediaTestModels.Incompressible.E
- #4424 Completely specify initial conditions for DynamicPipeEnergyConservationCheck and DynamicPipeEnergyConservationCheck2
- #4450 (PR) Add comparison signals for DynamicPipeEnergyConservationCheck and DynamicPipeEnergyConservationCheck2
- #4510 ModelicaTest.Electrical.QuasiStatic.*.FrequencySweep is missing experiment annotation
- #4515 (PR) Remove extra comparisonSignals file that doesn't match an existing model
- #4521 (PR) Add missing experiment annotations

- #4554 Asserts on Real values with test models are too tight
- #4566 (PR) Fix for #4424
- #4581 (PR) Add numerical tolerance to floating-point number comparison in ModelicaTest.Fluid.TestComponents.Machines.TestLinearPower

Resources

Bugs

- #3614 (PR) Update Run.mos for MultiBody examples
- #3767 (PR) Add more explicit conversion rules for inherited gasConstant function

Examples

- #4565 (PR) Update Electrical.Machines/Examples/SynchronousMachines/SMPM_NoLoad/comparisonSig

Documentation

- #4251 (PR) Create Modelica.UsersGuide.ReleaseNotes.Version_4_1_0

Miscellaneous

- #3580 (PR) Save the CFLAGS already passed to the script
- #3591 (PR) Remove zero inductor currents in comparison signals
- #3618 (PR) Fix result file name in Run.mos script
- #3753 (PR) Add semicolon after conversion commands of ConvertModelica_from_3.2.3_to_4.0.0.mos
- #3794 (PR) Turn compiler warning of implicit function declaration to error
- #3800 (PR) Fix (all but one) conversion issues reported by Dymola
- #3867 Is ModelicaUtilities.h tool-specific?
- #3961 (PR) Remove outdated unused image files
- #4167 (PR) Remove voltageSensor.v from the comparison list
- #4179 (PR) Remove duplicates in SignalNames of 10 examples of ModelicaTest
- #4268 (PR) Make third-party licenses explicit
- #4316 MSL v4.1.0-beta.1 feedback: broken Dymola plot scripts
- #4322 (PR) Fix plot scripts
- #4349 MSL 4.1.0 Reference results for new models
- #4371 (PR) Update CoupledClutches.mos
- #4463 (PR) Remove useless and numerically critical error signals from MoistAir tests
- #4487 (PR) Restore and modernize ModelicaUtilities.h

StateGraph

Examples

- #4076 Modelica.StateGraph.Examples.Utilities.Tank could set units for its variables

Documentation

- #4202 (PR) Fix broken links in Modelica.StateGraph

Miscellaneous

- #4264 (PR) Set unit instead of having it in description

Thermal.FluidHeatFlow

Enhancements

- #3956 (PR) Add animated level on the icon layer of the OpenTank

Examples

- #4141 (PR) Improve documentation and description for FluidHeatFlow

Documentation

- #3474 Improve doc strings and documentation of FluidHeatFlow

Thermal.HeatTransfer

Documentation

- #3954 Broken link to academia.edu
- #4199 (PR) Fix link to Holman2010

Miscellaneous

- #4540 (PR) Remove redundant text in celsius to kelvin icon

Units

Enhancements

- #3872 (PR) Add electrical quantities per unit length

Miscellaneous

- #3295 Unit of permeability
- #3811 (PR) Change unit of permeability to V.s/(A.m)
- #4103 (PR) Fix unit error in SimpleLiquidWater model
- #4105 (PR) Add StoichiometricCoefficient next to StoichiometricNumber
- #4264 (PR) Set unit instead of having it in description

UsersGuide

Documentation

- #3804 (PR) Fix/remove dead links
- #3844 Conflicting guidelines for HTML documentation conventions for tables
- #3848 (PR) Remove `align=bottom` from guidelines and code
- #3854 (PR) Remove obsoleted BMBF link
- #4216 (PR) Add recommendation for styling of 'tab' and 'group' annotations
- #4221 (PR) Add recommendation for code formatting (and apply it)
- #4251 (PR) Create Modelica.UsersGuide.ReleaseNotes.Version_4_1_0
- #4435 (PR) Fix links
- #4501 (PR) Remove dead link to old OM wiki

Utilities

Bugs

- #3615 ModelicaServices classes extends from classes in a partial package
- #3617 (PR) Models should be partial, not the package

Enhancements

- #3503 (PR) Improve fault-tolerance of Modelica.Utilities.Strings.substring w.r.t. index arguments and remove undocumented case with endIndex=-999

Examples

- #3608 Incorrect dimension parameter used when defining A in Modelica.Utilities.Examples.ReadRealMatrixFromFile
- #3609 (PR) Use correct dimensions
- #3921 Enhancement of Modelica.Utilities.Examples.readRealParameter
- #3922 (PR) Add optional default return value parameter

Documentation

- #4059 (PR) Document unicode for String functions

- #4073 (PR) Fix documentation of Modelica.Utilities.System.getTime()
- #4440 (PR) Update documentation according to changes in the Modelica Specification

Miscellaneous

- #3728 (PR) Fix Modelica.Utilities.Strings.hashString to always use provided HASH_AP and update 3rd-party header uthash to v2.3.0
- #4419 Is Modelica.Utilities.Strings.hashString supposed to be tool-independent?
- #4578 Modelica.Utilities.Streams.error should not require that ModelicaError is exported by ModelicaExternalC
- #4583 (PR) Rewrite Streams.error in terms of assert