PTV Vissim & Viswalk 9
Release Notes

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PTV GROUP

the mind of movement

9.00-04 [63068]

2016-11-03

⊕ New Features and Changes

COM Interface

⊕ In VBA, the command "Option base 1" (to use 1-based Arrays) works now correctly for the methods GetMultipleAttributes, SetMultipleAttributes and SetMultiAttValues. (The command still doesn't affect GetMultiAttValues - here, the Array is always 0-based.) **(10685 ❗)**

EmissionModel.DLL Interface

⊕ 18 new pollutants are available which can be calculated by a suitable EmissionModel.DLL and are collected in new attributes in vehicles, link segments and the network performance evaluation. **(11345)**

Graphics

⊕ Automatic level-of-detail handling for 3D signal heads increases the rendering speed. **(10970)**
⊕ New predefined color scheme "LOS value" (1-6) for nodes. **(11286)**

Vehicle Simulation

⊕ Vehicles have the new attribute "Indicating" (values "left", "right" or "no") which shows the direction of the indicator as shown in the Vissim network window. **(11355)**

Viswalk

⊕ Improved heuristics for route choice across stairs/ramps and elevators **(11215 ❗)**
⊕ The area result attributes "Pedestrians (average)", "Pedestrians (maximum)" and "Pedestrians (minimum)" have been renamed to "Queue length (...)" because they have always counted only pedestrians in the queue. The old non vehicle class dependent attributes "Queue length (...)" have been removed. You can use "All" as third subattribute now to get the same value (for all vehicle types). **(8896)**

✓ Fixed Bugs

ANM Import

✓ Non-adaptive import of only an *.anmroutes file into a network with a *.panm reference is now possible even if that *.panm file doesn't exist anymore. **(10897)**
✓ Several improvements in the link geometry generation. **(9373)**

COM Interface

✓ The parameter Speed of the method IPedestrianContainer.AddPedestrianOnAreaAtCoordinate() is interpreted as value in the current unit for large speeds now (as the parameter DesiredSpeed). (Previously, Speed was interpreted as in m/s.) **(11267 ❗)**
✓ Unusable interfaces to singular child objects have been removed from the HTML COM reference. **(11233)**

Dynamic Assignment

✓ If a vehicle has already been assigned a parking space and then passes another parking space decision for its destination parking space (group), there is no unfounded warning about no parking space being assigned anymore. **(11271)**
✓ If a vehicle has already been assigned a parking space in its destination parking lot and then passes another parking space decision, it doesn't ignore its current destination parking space anymore when choosing again the most attractive available parking space. **(11228 ❗)**

- ✅ The Visum export writes link lengths correctly in meters now, independent from the latitude. **(11338)**
- ✅ Very short connectors close to a node border don't cause problems anymore (message "unexpected end of node"). **(11275)**

Evaluations

- ✅ If a discharge evaluation file cannot be opened, the user decision to simulate anyway (or not) is handled correctly now. **(11259)**

Graphics

- ✅ Transparency is supported now for sketchup models with JPG textures. **(11146)**

Network Editor

- ✅ A rotated background can be scaled correctly now. **(11038)**

Read Additionally

- ✅ The suggested default offset value for link/connector numbers makes sense now. (Zero usually caused later number conflicts in scenario management.) **(11265)**

Scenario Management

- ✅ Unfounded error messages about already existing conflict areas upon reading of modifications have been removed. **(11241)**

Signal Control

- ✅ More than 258 RBC controllers in the network don't cause the simulation to crash soon after the start anymore. **(11257)**
- ✅ RBC controllers don't crash anymore when the simulation run is stopped or ends. **(11101)**

Vehicle Simulation

- ✅ "Combine static routing decisions" cannot cause a crash because of a circular combination of a route with itself anymore. **(11273)**
- ✅ The activated conflict area attribute "Observe adjacent lanes" works correctly now. (It had been ignored since Vissim 8.00.) **(11314 ❗)**
- ✅ The parking space selection is much faster now in networks with many parking lots. **(11211 ❗)**

Viswalk

- ✅ Areas, obstacles and ramp outlines are shown dashed only if their own display type has the attribute "invisible" set. (Previously, this happened for all other areas/obstacles respectively ramps with a lower respectively higher number as well.) **(11264)**
- ✅ The global behavior parameters CellSize and E-Density are not used swapped anymore. **(11255 ❗)**
- ✅ Very short ramps don't cause the simulation to crash anymore. **(11294)**

❗ Breaking Changes

COM Interface

- ❗ In VBA, the command "Option base 1" (to use 1-based Arrays) works now correctly for the methods GetMultipleAttributes, SetMultipleAttributes and SetMultiAttValues. (The command still doesn't affect GetMultiAttValues - here, the Array is always 0-based.) **(10685 ⊕)**
- ❗ The parameter Speed of the method IPedestrianContainer.AddPedestrianOnAreaAtCoordinate() is interpreted as value in the current unit for large speeds now (as the parameter DesiredSpeed). (Previously, Speed was interpreted as in m/s.) **(11267 ✅)**

Dynamic Assignment

- ❗ If a vehicle has already been assigned a parking space in its destination parking lot and then passes another parking space decision, it doesn't ignore its current destination parking space anymore when choosing again the most attractive available parking space. **(11228 ✅)**

Vehicle Simulation

- ⊘ The activated conflict area attribute "Observe adjacent lanes" works correctly now. (It had been ignored since Vissim 8.00.) **(11314 ✓)**
- ⊘ The parking space selection can select a different parking space now in rare cases. **(11211 ✓)**

Viswalk

- ⊘ Improved heuristics for route choice across stairs/ramps and elevators **(11215 ⊕)**
- ⊘ The global behavior parameters CellSize and E-Density are not used swapped anymore. **(11255 ✓)**

9.00-03 [62163]   2016-09-08

⊕ New Features and Changes

Dynamic Assignment

- ⊕ Additional values in the convergence evaluation: Separate columns for volume difference zero and travel time difference classes 0-5%, 5-10%, 10-15%, 15-20%; new column for number of "new" edges/paths (which have been used for the first time in this iteration); additional row for percentage of converged paths, edges (by travel time) and edges (by volume); convergence condition met ('+') or not ('-'). **(11004)**
- ⊕ For each active convergence condition, the minimum percentage of edges/paths which must meet the condition can be set. The default value for new networks is 95%, but for old files it stays at 100% to avoid an unexpected change of behavior.
  In addition, a minimum number of consecutive simulation runs can be set which must meet the convergence conditions before a multi-run is stopped due to convergence.
  The object "simulation run" has the new attribute DynAssignConv which shows if all active conditions have been met in that run. **(10400)**
- ⊕ New option "Equilibrium Assignment" for path choice, as alternative to "Stochastic assignment (Kirchhoff)" and "Use volume (old)". If this new option is selected, the goal of the dynamic assignment is a distribution of vehicles over the known paths for a parking lot O-D relation so that all actually used paths of that relation have the same generalized cost for the subject vehicle type, with possibly quite different volumes on these paths. (This is in contrast to the stochastic Kirchhoff method where the assignment will always distribute identical volumes to paths with the same generalized cost.) In order to achieve that equilibrium, each subsequent iteration redistributes a decreasing share of the total traffic per parking lot O-D relation from paths with higher than average generalized cost to paths with lower than average generalized cost. In iteration n, that share is 1/n of the total volume for that relation. The number of already executed iterations is stored in the path file (*.weg) and shown in the dynamic assignment dialog. It is recommended to use the cost options "same time interval, previous simulation run" and "exponential smoothing" with a factor of 1.0 (no smoothing) for the equilibrium assignment. For path search, "Decide at start only" must be used. **(33)**
- ⊕ The path pre-selection options "Reject paths with too high total cost" and "Limit number of paths" don't cause any paths to be deleted anymore from the path collection / path file. They only prevent these paths to be used in the respective time intervals. **(9530 ⊘)**
- ⊕ When an already existing path file is selected in the dynamic assignment dialog, the options "Search new paths" and "Store paths (and volumes)" are not unchecked automatically anymore. **(11103)**

Network Editor

- ⊕ New context menu item in insert mode for links: "Add Circular Link". After this has been clicked, a circular link (with 48 spline points) is created, with the start of the center line at the right click position (for opening the context menu). The radius of the circle can be changed by dragging the mouse pointer. A second click opens the link dialog where the number of lanes and other attributes can be set. A connector from the end of the circular link to its start is added automatically after click on OK. **(39)**

Usage Data Feedback

- ⊕ Users who have agreed to take part can optionally (via the settings in the user preferences) see the data transferred. The data transferred is saved to a file 'Telemetrydata_<yyyymmdd>_<hhmmss>.log' located in the temporary folder ('%temp%\VISSIM'). Upon start of the program all files older than a day are deleted. **(11014)**

Viswalk

- ⊕ Elevators: Elevator groups have two new attributes to define the queuing behavior for pedestrians waiting for an elevator. This behavior is used for all pedestrian types on all levels where no waiting area has its own queuing behavior assigned. If multiple waiting areas on a level have different queuing behaviors, a warning message is written to the message window, and only the behavior from the waiting area with the smallest ID is used. **(11011)**
- ⊕ The default display types and behavior types to be referenced by new elevators and elevator groups can be set in the network settings. If an old network file without such default references is opened, suitable default types are created automatically. **(10972)**

Workspace

- ⊕ New menu item "Help / Examples / Readme Examples" which opens the PDF document describing the example files with English documentation provided with Vissim. **(11105)**

✅ Fixed Bugs

Dynamic Assignment

- ✅ The path selection method "Decide repeatedly" doesn't cause crashes anymore in specific situation with possible loops in the network. **(11034)**

Evaluations

- ✅ The legend section of the header of direct evaluations (e.g. the vehicle record) don't have any line breaks anymore in attribute descriptions. **(10711)**

Graphics

- ✅ Speedup of the loading of background maps (when many tiles are required). **(11140)**

Network Editor

- ✅ Performance improvements for the visualization of a high number of selected objects. **(11173)**

Scenario Management

- ✅ Saving a scenario doesn't fail anymore because of an unexpectedly still existing backup of the extended model transfer file to be saved. (These backup files are meant to be only temporary.) **(11145)**

Signal Control

- ✅ In the signal times table window, the time measurement tool and the scaling of the time axis are correct now for controllers with a frequency greater than 1, too. **(10910)**

Vehicle Simulation

- ✅ A network object at the identical link coordinate as the start of a connector or at the exact end coordinate of a connector works correctly now for all vehicles which move to the other link there. (Previously, it was undefined if the network object was ignored.) One example is a conflict area extending to the end of a connector: this conflict area has always the expected effect now. **(11193 ⓘ)**
- ✅ Vehicles on the yielding link can now enter a conflict area even if there is a downstream stop sign with not enough room in between for the full vehicle length. **(11177 ⓘ)**

ⓘ Breaking Changes

Dynamic Assignment

- ⓘ The path pre-selection options "Reject paths with too high total cost" and "Limit number of paths" don't cause any paths to be deleted anymore from the path collection / path file. They only prevent these paths to be used in the respective time intervals. This allows these paths to be used in later intervals and/or iterations without requiring to find them again as shortest path. **(9530 ⊕)**

Vehicle Simulation

- ⓘ A network object at the identical link coordinate as the start of a connector or at the exact end coordinate of a connector works correctly now for all vehicles which move to the other link there. (Previously, it was undefined if the network object was ignored.) One example is a conflict area extending to the end of a connector: this conflict area has always the expected effect now. **(11193 ✅)**

⊘ Vehicles on the yielding link can now enter a conflict area even if there is a downstream stop sign with not enough room in between for the full vehicle length. **(11177** ✓**)**

9.00-02 [61910]

⊕ New Features and Changes

COM Interface

⊕ New function SimulationRunContainer.RemoveSimulationRun(). **(11021)**

⊕ New functions for DynAssignDemandContainer: AddDynAssignDemand(), RemoveDynAssignDemand() and ItemByKey(). **(11069)**

⊕ The method IAccelerationFunctionDataPointContainer.ReplaceAll can now be used during a simulation run as well to replace all data points of an acceleration function. Ditto for deceleration functions. **(11081)**

Graphics

⊕ 3D Signals: Additional green 1-Lens arrow signals for through, left 45° and right 45°. Additional amber 1-Lens arrow signals (active when the assigned signal group is green!) for left, left 45°, through, right 45° and right. **(11085)**

⊕ New bus model added as default 2D/3D model for a 2-door standard bus. Includes animated doors. Left-hand version also included in the model library. **(11076)**

⊘ Fixed Bugs

ANM Import

⊘ Networks generated by ANM import can be exported to Visum now (to be later imported adaptively or for an initial assignment in Visum) without causing error messages about invalid node numbers. **(11033)**

Dynamic Assignment

⊘ Empty travel time values in the path file (for paths which haven't yet been used in the respective time interval) are not treated as a travel time of 0.01 seconds anymore. **(11110** ❗**)**

Installation

⊘ VDiagGUI.exe: The buttons "Reset Dialog Positions", "Start Vissim in Diagnostics Mode" and "Enable 3D Mode"/"Disable 3D Mode" work correctly now. **(11149)**

Network Editor

⊘ The context menu command "Recalculate Splines" (with or without "height only" or "X/Y only") works correctly now for a multi-selection of links and/or connectors including a link/connector without any spline points. **(11079)**

Scenario Management

⊘ No crash anymore upon opening the user preferences after saving a scenario or a modification. **(11127)**

Signal Control

⊘ RBC Controllers don't show multiple unnecessary follow-up error messages anymore when a simulation run must be canceled because of an error in the RBC data. **(10960)**

⊘ VAP: The remaining intergreen time is calculated as integer (always rounded down) for the functions Remaining_intergreen() and Test_intergreen() even if the controller frequency is > 1. **(11163)**

Vehicle Simulation

⊘ A vehicle approaching a conflict area with exactly its desired speed during a lane change can not post a wrong expected trajectory anymore for other vehicles on the conflicting link. **(11118** ❗**)**

⊘ The simulation was not always reproducible (differences only after opening the network a second time) if certain network objects had different parameters assigned for overlapping vehicle classes: reduced speed areas, conflict areas, desired speed decisions, link behavior types, parking lots or stop signs. This problem has been fixed. **(11102** ❗**)**

❗ Breaking Changes

Dynamic Assignment

⚠ Empty travel time values in the path file (for paths which haven't yet been used in the respective time interval) are not treated as a travel time of 0.01 seconds anymore. **(11110** ✅**)**

Vehicle Simulation

⚠ A vehicle approaching a conflict area with exactly its desired speed during a lane change can cause a simulation result differing from previous versions. **(11118** ✅**)**

⚠ Simulation results can differ from previous versions if certain network objects had different parameters assigned for overlapping vehicle classes: reduced speed areas, conflict areas, desired speed decisions, link behavior types, parking lots or stop signs. **(11102** ✅**)**

9.00-01 [61401]   2016-07-26

⊕ New Features and Changes

Lists

⊕ Cells with special controls, e.g. for a drop-down list or for file selection, react immediately on the first mouse click on the special control now. **(10869)**

⊕ The matrix editor window for a matrix can be opened through double click on its row header in the matrices list. **(10999)**

Scenario Management

⊕ Comparison scenarios are sorted by number in the tree in the attribute selection dialog now. **(10947)**

Viswalk

⊕ Context menu item "Show Elevator Group List" in the elevators list and in the network editor (after right click on an elevator). **(10976)**

✅ Fixed Bugs

ANM Import

✅ Parking lots on Vissim-generated stub links for zone connectors leading onto multi-arm nodes do now carry a desired speed distribution that is consistent with the corresponding ANM-link speed. **(10899)**

✅ The adaptive import doesn't fail anymore if nodes have been deleted in the Vissim network which still exist in the ANM file. **(10982)**

Dynamic Assignment

✅ The options "Limit number of paths" and "Reject paths with too high costs" can now safely be used in meso simulations without compromising the reproducability of the results. **(10988)**

File Handling

✅ The Visum Export writes all coordinates to the *.net file in Sphere Mercator projection now. (This projection needs to be set manually in Visum after the import because the currently used *.net file format doesn't contain a projection ID yet.) **(10907)**

Graphics

✅ Loading a sketchup model file without valid geometry doesn't cause a crash anymore. **(10833)**

✅ The 3D layout parameters for level of detail have been removed. Vehicles and pedestrians are automatically hidden if they are smaller than 10 pixels. **(10924)**

Lists

✅ If the leftmost column in a list window is not fully visible (because of the position of the horizontal scrollbar), the simulation could hang. This problem has been fixed. **(9668)**

- ✅ New 2D/3D model distribution elements and colour distribution elements are now added always at the end of the list. **(10931)**

Meso Simulation

- ✅ Meso evaluation results, e.g. densities and queue lengths on meso lanes, don't show invalid values (arbitrary high numbers) anymore if the meso evaluation doesn't start at simulation time 0. **(10933)**

Messaging

- ✅ All messages during a simulation run are now always written to the message window (instead of modal message boxes). **(10946)**

Network Editor

- ✅ Setting the scale of a non-rotable background image works correctly now. **(10783)**
- ✅ Splitting a link with a PT stop doesn't cause a crash under specific conditions anymore. **(11007)**

Presentation

- ✅ Stop lines / signal bars are now recorded in an *.avi file even if quick mode is active. **(10769)**

Signal Control

- ✅ Detailed error messages from a signal controller DLL are not disabled anymore during a multi-run. They are written to the controller's *.err file now. **(11059)**
- ✅ In VAP controllers using a controller frequency greater than 1, interstages cannot take one time step too long anymore. **(11047)**
- ✅ Some VAP error messages contained unreadable strings. This problem has been fixed. **(11019)**
- ✅ The optional trace file (*.trc) written by a VAP controller doesn't contain illegible junk anymore. (That problem had been introduced in Vissim 8.00-10.) **(11048)**

Vehicle Simulation

- ✅ A vehicles leaving the network doesn't block a parking space anymore which it has reserved but not managed to use. **(10468)**
- ✅ If multiple deadlocks at combinations of priority rules happened in the same time step, the simulation was not reproducible. This problem has been fixed. **(10276)**

Viswalk

- ✅ Boarding passengers don't disappear anymore sporadically from waiting areas for PT stops with multiple boarding volume groups for the current time. **(10978)**

⛔ Breaking Changes

Vehicle Simulation

- ⛔ The effect of the driving behavior parameter attribute "Amber Behavior" which had been inverted since Vissim 6.00 is not inverted anymore: "Continuous check" now actually causes a repeated decision in each time step while the signal is amber, and "One decision" causes a single decision at the first time the amber signal is seen. This has not been fixed in Vissim 8, so if in Vissim 9 the amber behavior is required to stay unchanged in a network written by Vissim 8, this attribute must be switched in each driving behavior parameter. **(10980 ✅)**

9.00-00   [60898]   2016-06-24

⊕ New Features and Changes

ANM Import

- ⊕ Messages during the ANM import are now collected and displayed afterwards in the new message window. **(10724)**

COM Interface

- In addition to the predefined global objects "Vissim" and "CurrentScriptFile", event-based scripts now can use the predefined global object "CurrentScript" (with attributes "FromTime", "ToTime", "Period" and so on, as well as user-defined attributes) pointing to the list item which caused them to be called. **(9907)**
- Two new methods for ILink:
  MoveLinkDuringSim(dx, dy, dz, rotAngle) moves the link by the vector (dx, dy, dz) and then rotates it (around the center of the surrounding rectangle) by the angle rotAngle.
  MoveLinkToPointDuringSim(x, y, z) moves the link so that its new start point is (x, y, z).
  Both methods can be called only during a simulation run and don't work for connectors. Connectors to/from the link are adjusted, and vehicles on the moved link move with it. The move fails if one of the following conditions is met: An active node (for dynamic assignment, evaluation or meso) is in the network, the link evaluation, queue counter evaluation, travel time evaluation or delay evaluation is active, or there is an active conflict area on the link to be moved. **(7102)**

Data Model

- In the user preferences, default values can be set optionally for the lane width as well as the minimum gap time and minimum headway of priority rules. These values are used when new lanes/links respectively priority rules are created. If another link has been edited before creating a new link, the new link is created with the lane widths of the previously edited link, however. **(10382)**
- Indirect attributes of n:1 or 1:1 relations can be edited now. **(10130)**
- The area attribute "height" has been renamed to "z-Coordinate" (short "zCoord"). **(10312)**

Dialogs

- In most dialogs, the specific HTML help page for that dialog can be opened through F1 or a click on the '?' icon. **(7943)**
- The object types in the dialog "Read additionally" can be optionally sorted alphabetically now (or by one of the other columns). **(320)**

Dynamic Assignment

- Matrix Editor:
  Matrices are now network objects which are stored in the *.inpx file. Each matrix is quadratic and contains all defined zones. From time and to time are the relevant attributes of a matrix.
  When an old *.inp or *.inpx file with matrix file references is opened, the respective matrix objects are created (with the filename as matrix object name) and filled with the values from these files. If the matrix file has a Factor different from 1, it is directly applied to all matrix cells. After this, the file reference is not used anymore.
  The list of matrices can be opened from the menu (Traffic / Dynamic Assignment or Lists / Private Transport). The matrix editor for an individual matrix can be opened through double click on the row header in the matrix list or through the context menu or the toolbar button "Edit matrix values".
  In the matrix editor, row and column totals are automatically displayed in the additional "Sum" row/column. The total sum is shown as tooltip on the "Sum" cell.The layout (cell size and number of decimals) can be modified via the toolbar button "Matrix editor graphics parameters". Editing of cells works similarly to editing list cells. Copy & paste functionality is available, as are "=*2" and other mathematical operations. **(4112)**

Evaluations

- Data Collection Measurements have the new attributes "Occupancy rate" (percentage of the time that a vehicle has been on at least one of the data collection points) and "Speed (harmonic average)" (harmonic average of all detected vehicle speeds). The previous attribute "Speed" is named "Speed (arithmetic average)" now. **(9092)**
- Node movements have three new attributes for level of service:
  - "Level of service" (with subattributes simulation run and time interval) is a letter from A to F, listing the LOS of the movement calculated similarly to the LOS definition from the HCM 2010. See the Vissim 9 manual for details.
  - "Level-of-service value" (with the same subattributes) is an integer value from 1 (for A) to 6 (for F) which is better suited for user-defined formula attributes and for color schemes (which can use only numerical attributes).
  - "Level-of-service scheme type" (without subattributes) lists the LOS type of the node as determined by Vissim: "Signalized" or "Non-signalized". ("Diverge", "Merge" and "Weaving" will become available in a later version.)
  The virtual movement "Total results" can be used to show the aggregated LOS for the complete node. **(9789)**
- Vehicle Travel Time Measurements: New attribute "traveled distance" (from the start section to the destination section of the travel time measurement, since the route is not defined), in raw data and as aggregated evaluation attribute (average). **(8718)**

File Handling

- The Vissim executable is named VISSIM90.exe now, the demo version VISSIM90_DV.exe and the academic student version VISSIM90_U.exe. **(9681)**

⊕ The new menu item "File / Save as Default Network" allows to save the current network as default network which will be subsequently loaded initially when Vissim is started (except by clicking on a network file) and upon File / New. This is typically used to include base data like region-specific 2D/3D models and 2D/3D model distributions as well as a suitable default unit selection but no links or areas. The file is saved as c:\Users\<Username>\AppData\Roaming\PTV Vision\PTV Vissim 9\defaults.inpx. If this file is deleted, Vissim uses the delivered file defaults.inpx from the Exe\ directory again.
The same handling applies to the default layout. As long as the user has not saved a personal default layout through "File / Save Layout as Default", the file defaults.layx from the Exe\ directory is used. As long as a defaults.layx exists in the Roaming directory, that one is used.
Two possible default networks for North America are included in the Vissim 9 examples: "Examples Training\Vehicle Fleet & Seetings Defaults\USA\defaults.inpx" and "..\Canada\defaults.inpx". **(9505)**

⊕ The results database is now stored as SQLite database (*.db). This allows file sizes of up to 140 TB (instead of only 4 GB with SQL Server Compact Edition). **(10523)**

Graphics

⊕ *.3ds and *.dwf files can be imported directly into the network as static 3D objects in the 64 bit edition, too. **(9539)**

⊕ Background maps (Bing, OSM) can be shown in 3D mode as well. **(8076)**

⊕ Horizontal 3D signal heads can be flipped (set attribute "flipped" in the coupled list "3D Traf-fic Signals / 3D Signal Heads"), so that the green light is at the left side. (This is not yet visible or editable in the 3D signal dialog.) **(7621)**

⊕ Pavement markings for left-hand traffic are completely supported now, including U-turns and US roundabout markings. **(9683)**

Installation

⊕ Vissim uses the .NET framework version 4.6 now. **(9861)**

License Handling

⊕ Before the final release of Vissim 9 in autumn, there is an open beta phase. Starting in July, users can apply to take part in this beta phase. The beta version of Vissim 9 uses a normal Vissim 8 license and has a fixed expiration date of September 30th. The add-on module "meso simulation" is always enabled in the beta version. **(10777)**

⊕ In addition to the user-specific license selection, a systemwide configuration can be defined (e.g. for operation in a Remote Desktop Services environment). Changing systemwide settings requires administrative user rights. Use the program "PTV Vissim License Manager" (which is accessible through the Windows Start Menu) for managing systemwide settings. These are stored in the file %ProgramData%\PTV Vision\PTV Vissim 9\licenses.data. If this file exists, the settings defined there are enforced for all users and no individual license configuration is possible. Use the button "Delete stored license list" in order to reset the central settings and allow individual license configuration by the users again. The systemwide configuration can also be activated during the software installation. This is achieved by selecting licenses already during the installation process. Of course, this requires an activated license to be available during the installation. **(10820)**

⊕ Warning message upon start of the program if the license expiration date is closer than 4 weeks. **(5942)**

Lists

⊕ The individual data points of distributions and functions can be edited in the child list of the coupled list ".. Distributions / Data Points" / ".. Functions / Data Points". This allows to specify the numerical values exactly. (Graphical editing in the distribution / function dialog is still possible, too.) **(8711)**

Meso Simulation

⊕ Critical gaps for meso turns can be imported from ANM (e.g. if exported from a Visum SBA model). **(10249)**

Presentation

⊕ Camera Positions can be created during a simulation run, and their attributes can be modified, too. **(10336)**

⊕ In the Presentation Menu, there is the new checkable item "Animation with ANI File" (default: checked). This allows to define if animation replay is run with or without *.ani file. If you don't use an *.ani file, only aggregated result values (written to the results database in previous simulation runs) are visualized, e.g. as link segments or link bars. The Animation toolbar (which can be activated in the context menu of the main toolbar) has a new control: The edit field "go to second" allows to navigate to a simulation time during animation replay (with or without *.ani file). **(8847)**

⊕ Keyframes for storyboards can use camera positions from a driver's / pedestrian's perspective. As long as such a keyframe is active, the 3D view travels with the respective vehicle / pedestrian. Such a camera position can be added by writing its name into the drop-down box for the camera positions while the driver's / pedestrian's perspective view is visible in the network editor window. Parameters as the head position over ground and the vertical viewing angle can be modified in the attributes PosZ respectively PitchAngle in the camera positions list window. **(8397)**

Scenario Management

⊕ In the project structure dialog, you can assign one or more other scenarios (to compare with) to each scenario. All attributes from these scenarios of objects which exist in both scenarios are accessible as indirect attributes of these objects in the currently loaded scenario.
In the attribute selection dialog for a network object, the attributes of that object in a scenario to compare are accessible in the tree view under "Scenario comparison:" with the name of that other scenario. For each attribute, you can use its value, or the difference between the values in the two scenarios (A-B) or (B-A), or the relative difference as percentage (A-B)/B or (B-A)/A, or the minimum or maximum of both values. In order to add one attribute from all scenario comparisons to the right side with one click, you can use the new arrow button with the scales icon.
The scenario comparison attributes can be used everywhere like direct attributes, i.e. they can be shown in lists and result lists and visualized in chart windows and in the network editor (for color schemes and link bars).
In normal lists (not result lists) an additional calculated boolean attribute is available for each scenario comparison: "Exists in scenario …". This can be used to show if the current object exists in that specific scenario to compare. **(8798)**

Signal Control

⊕ The signal controller dialog has been completely reworked. The setting to show signal group / detector names or numbers as labels is now included on the tab pages "Signal Times Table Config." and "SC Detector Record Config.". Depending on the controller type, attributes which cannot be modified (e.g. the program file name or fixed supply file names) are not shown anymore at all. **(7789)**

⊕ The signal controller interface supports Unicode strings now, e.g. for supply file names and signal group names. Old controllers which are not yet updated are still supported. **(10269)**

Simulation

⊕ Conflict areas have the new boolean attribute "Avoid blocking the major flow" (default: true). If this is switched off, a vehicle in the minor flow (red) can enter and stop inside a lane conflict even if a subsequent lane conflict is blocked by a prioritized vehicle. (When this happens, the major flow of the first lane conflict can be blocked.)
This is especially useful for modeling a long conflict area with a pedestrian link with many narrow lanes and pedestrian priority. If the attribute is switched off, the vehicle can enter the lane conflicts lane by lane and so eventually pass the area. Previously the vehicle had to wait until it could pass the whole conflict area (and any subsequent closely spaced conflict areas) in one continuous move.
The attribute "Avoid blocking" has been renamed to "Avoid blocking the minor flow" and applies to the major flow (green) of a conflict area. It still shows a percentage. **(9647)**

⊕ Several checks which previously had been always executed upon reading a network file or at the start of the simulation run have been moved into the function "Check Network". This function can be run manually from the Simulation menu, and/or automatically at the start of a simulation run if the respective new setting is active in the user preferences. **(9344)**

Usage Data Feedback

⊕ Vissim 9 can optionally collect diagnostics and usage data, e.g. the number of clicks on menu items, the size of networks, the time for network editing versus simulation runs and so on. This data is sent anonymously to our servers, so it cannot be traced back to you. The data allows us to better prioritize future features, where to improve the user experience and maybe even to decide which functions to remove because nobody uses them at all. After the third start of Vissim 9, you will be asked if you want to help us in this by allowing Vissim 9 to collect your usage data. This setting can be changed at any time in the user preferences. **(8975)**

User-Defined Attributes

⊕ User-defined formula attributes are now available for movements (node evaluation), segments (link evaluation), OD pairs and pedestrian grid cells. **(10228)**

Vehicle Simulation

- PT Lines have the new optional attribute "Entry time distribution" which contains a reference to a time distribution. For each vehicle on this PT line, a time is drawn from this distribution which is added to the calculated input time (departure time minus time offset). There is no need anymore to use a dummy PT stop. **(210)**
- Parking routes: Vehicles on a static route can be rerouted by a parking lot routing decision only if they can get back to their original route destination from the parking lot. This is to avoid vehicles to leave their route and never return back because there is no possible link sequence in the network to route them to their original destination. **(3112)**
- The desired headway parameter CC1 of the Wiedemann 99 car following model is drawn for each vehicle from a time distribution now (instead of the same fixed value for all vehicles), so variance in desired headways between vehicles can be modeled more easily. If an old file is read, a constant time distribution is automatically created from the fixed value. **(9739)**

Viswalk

- Conflict areas between vehicle links and pedestrian links now prevent pedestrians from walking laterally into a blocked lane conflict, too. This is important for modelling of shared space with a wide pedestrian link with many lanes crossing a vehicle link. **(9648)**
- Elevators:
  Elevators are a new type of network object which can be added in the network editor like areas. Each elevator can have multiple doors, and each door can have different active levels (on which the door opens). An elevator must belong to an elevator group which has a common control for all elevators in its group. On each floor, an area needs to be assigned to the elevator group as waiting area (similar as for a public transport stop). See the Vissim 9 manual for details. **(4007)**
- On stairs and ramps, different area behavior types can be used for upstairs / downstairs. For (almost) horizontal ramps, the area behavior type "(flat)" can be assigned. **(9502)**
- Result attributes for pedestrian grid cells are saved in the results database and can be used for visualization of areas even after a simulation run. **(7565)**
- The dialog for a pedestrian route location or the route end location can be opened in the network editor through the context menu item "Edit..." as well now (previously only through double click). **(8033)**
- The method previously used for the static potential field calculation has been replaced by the much faster method which is used for dynamic potential fields (but only once and without looking at other pedestrians, of course). In combination with other improvements this is especially noticeable for interaction of pedestrians with public transport. **(10303)**
- Vehicle types have the new boolean attribute "Capacity is exact". If this is set, the capacity limit is enforced exactly for pedestrians as passengers at PT stops, even if the vehicle has multiple doors.Otherwise, the capacity can be slightly exceeded if multiple passengers board in the same time step. **(10142)**