PTV Vissim & Viswalk 2021
Release Notes

PTV **GROUP**

the mind of movement

Last modified: 2020-12-15

2021.00-04   [93532]

2020-12-14

⊕ New Features and Changes

Viswalk

⊕ It is now possible to define a minimum distance for pedestrians waiting on a public transport platform. This can be done with the new attribute 'Waiting area minimum spacing' on areas. **(15588)**

✅ Fixed Bugs

Evaluations

✅ An issue was fixed in the link segment evaluation with activated platooning. **(15627 ❗)**

Meso Simulation

✅ The link segment evaluation for meso simulation was re-engineered. The new calculation is more precise, especially for low volumes. This also fixes a specific issue with unrealistically high speeds. Also, vehicle delays on zero length meso edges are now correctly aggregated to the respective link segment **(11533 ❗)**

Vehicle Simulation

✅ A crash was fixed in vehicle simulation in connection with public transport. This crash only occured, when a public transport vehicle, where the capacity was exceeded, stopped at a stop without a boarding area, among other conditions. **(15652)**

✅ A crash was fixed in vehicle simulation with platooning. This only occured, when the platoon leader wanted to make an impossible lane change and was removed from the network. **(15625)**

✅ An issue was fixed in vehicle simulation with platooning. This issue occurred in networks where connectors left a link at the identical position. In this case the dispersal of the platoon did not work correctly. **(15614 ❗)**

Workspace

✅ The simulation time setting can again be toggled by double clicking, not only with the menu entries. **(15696)**

❗ Breaking Changes

Evalutanions

❗ The results of the link segment evaluation might differ when platooning is activated. **(15627)**

Meso Simulation

❗ Results of the link segment evaluation will be different. **(11533 ✅)**

Vehicle Simulation

❗ Results will differ in all networks, where platooning is activated and there exist connectors that leave a link at identical positions. **(15614 ✅)**

2021.00-03   [92879]

2020-11-18

⊕ New Features and Changes

Data Model

⊕ 3D information signs can now also be assigned to static 3D objects. **(15590)**

Dialogs

⊕ Duplicate & rename in the attribute selection dialog: The list of selected attributes on the right side now allows to duplicate an attribute through the context menu. Furthermore, the attribute ID can be edited to change the selection. Both together make it very easy to add a slightly different complex attribute (e.g. an indirect attribute with an aggregation function or an attribute with subattributes). If the value type of the attribute is not changed in the process, the formatting settings are retained when the attribute ID is changed. **(15549)**

⊘ Fixed Bugs

ANM Import

⊘ The adaptive import could crash if the option "Delete omitted objects" was checked. This problem has been fixed. **(15639)**

Network Editor

⊘ In the special mode "Create car park", [Ctrl+] right drag can be used now as well as left drag to create parking lots adjacent to an existing link. **(15654)**

Vehicle Simulation

⊘ A vehicle checking for the possibility of a necessary lane change uses now the desired speed of other vehicles from the previous time step, so this calculation is always reproducible even if the two vehicles are on different links and the simulation is multi-threaded. **(15535 ❗)**

⊘ Parking out in reverse to a multi-lane link could cause Vissim to hang. This problem has been fixed but collisions in such a situation are still possible because the automatic yielding of vehicles to each other during parking out is not yet implemented in this case. **(15572 ❗)**

⊘ When using a driving behavior without slow lane rule (or when the leading vehicle's speed is below 60 km/h so slow lane rule is ignored), vehicles now consider their current maximum speed (defined by the maximum acceleration function and the current gradient) when deciding if to change lanes in order to overtake a slow vehicle. This is especially relevant for trucks on uphill slopes which now don't start hopeless overtaking attempts anymore. **(15611 ❗)**

Viswalk

⊘ A problem of missing cells on ramps in the grid cell evaluation has been fixed. **(15613 ❗)**

⊘ Multiple pedestrians entering a waiting queue could cause a multi-threaded simulation run to be non-reproducible. This problem has been fixed. **(15575 ❗)**

⊘ Overlapping future pedestrian times on conflict areas could be calculated wrongly and not reproducibly. This problem has been fixed. **(15601 ❗)**

⊘ Pedestrians cannot "jump over the fence" anymore at U-turns of stairs with a very small gap between the two directions. **(15594 ❗)**

❗ Breaking Changes

Vehicle Simulation

❗ A change of the desired speed of a vehicle can cause simulation results to differ from previous version if the exact time of that change is relevant for a necessary lane change of another vehicle. **(15535 ⊘)**

❗ Parking lots with parking out in reverse to a multi-lane link can cause simulation results to differ from previous versions. **(15572 ⊘)**

❗ Simulation runs can have results differing from previous versions if a vehicle's maximum speed on a multi-lane link is smaller than its desired speed (e.g. on an uphill slope). **(15611 ⊘)**

Viswalk

❗ Multi-threaded simulation runs with waiting queues can have results differing from previous versions. **(15575 ⊘)**

❗ Obstacles and parts of areas which are smaller than the grid cell sizes can cause simulation results to differ from previous versions. **(15594 ⊘)**

❗ Overlapping pedestrian times on conflict areas can cause simulation runs to have different results from previous versions. **(15601 ⊘)**

⚠ The grid cell evaluation results on ramps can differ from previous versions (since 2021.00-01). **(15613 ✅)**

2021.00-02 [92156]

⊕ New Features and Changes

Data Model

⊕ New calculated attributes "WktLocWGS84", "Latitude (WGS 84)" / "LatWGS84" and "Longitude (WGS 84)" / "LongWGS84" for"LinkPolyPoint" which contain the world coordinates of the point as WGS84 longitude and latitude. **(15248)**

File Handling

⊕ All text output files except test mode macro files (*.m_o) are written with the character encoding UTF-8 now. A byte order mark (BOM) is written only into *.err and *.att files and also if the file is meant to be read by a PTV Vision program (and if that file without BOM is still to be read as ANSI): dynamic assignment files, ANM files, *.net for Visum. **(14972 ⚠)**

⊕ The handling of the model archive has been changed because the temporary folder didn't allow easy access to text evaluation files. Now, the file open/save dialog doesn't contain the file type "*.vissim" anymore but there is the menu item File / Export / Model Archive which allows to create a *.zip file containing all the referenced files with the *.inpx file. The menu item "Extract Model Archive to..." has also been removed because a *.zip file can be easily extracted with the Windows Explorer. **(15542)**

Network Editor

⊕ During the complex editor states started from the vertical toolbar (major flow definition, car park creator, simple ITS), a new short help window is shown in the top right corner which lists the next editing step and possible options. The short help can be switched off (and back on) with the button at the right end of the network editor toolbar. **(14494)**

Signal Control

⊕ New French version of VisVAP including full documentation. **(15580)**

Viswalk

⊕ New area attributes "Queue spacing choice" (values: "Default" or "Fixed") and "Queue spacing" which define the pedestrian spacing behavior in queues if the area is a queueing area. "Default" is the traditional model with the spacing increasing backwards along the queue, and "Fixed" allows to set a fixed spacing value between each two adjacent pedestrians in the queue. **(15160)**

✅ Fixed Bugs

ANM Import

✅ The desired speed distributions in a network imported from ANM are now reproducible even if there are multiple class-specific desired speeds in the ANM file which differ by less than 0.1 km/h. **(15546 ⚠)**

Presentation

✅ 3D signal heads are now also shown in an *.avi video which was recorded with active quick mode. **(15503)**

Viswalk

✅ Alighting passengers from PT vehicles are now handled correctly by the network performance evaluation and for fire events. **(15414 ⚠)**

✅ The behavior of pedestrians on waiting areas is now also reproducible in certain special situations. **(15447 ⚠)**

✅ The pedestrian grid is now immediately updated after adding an area, so it is fully shown in a subsequent simulation run. **(15470)**

Workspace

✅ The missing menu item "Lists / Results / Vehicle Travel Time Results" is back. **(15578)**

🛑 Breaking Changes

ANM Import

🛑 Multiple class-specific desired speeds in the ANM file which differ by less than 0.1 km/h can cause the network to differ from an import with a previous version. **(15546 ✅)**

File Handling

🛑 The encoding of special characters in most text output files has been changed to UTF-8. In soime cases, a BOM has been added at the start of the file. **(14972 ⊕)**

Viswalk

🛑 Alighting passengers from PT vehicles can cause the network performance evaluation results to differ from previous versions. **(15414 ✅)**

🛑 Pedestrian behavior on waiting areas can differ from previous versions if a pedestrian starts to wait in the same time step when another nearby pedestrian arrives on the waiting area. **(15447)**

2021.00-01 [91224]   2020-09-17

⊕ New Features and Changes

Data Model

⊕ 3D Information Signs can now also be assigned to parking lot groups and parking spaces. **(15340)**

⊕ Links have the new calculated attribute "WKT polyline (WGS84)" which contains a list of the spline points of the link (including start and end point) in WGS84 coordinates (longitude / latitude) formatted as WKT LINESTRING.
Nodes have a similar attribute called "WKT polygon (WGS84)" which contains all polygon points.
For both links and nodes the new calculated attribute "WKT location (WGS84)" contains the label position in WGS84 coordinates formatted as WKT POINT. **(14955)**

Dialogs

⊕ New item "Copy ID" in the context menu of the attribute selection dialog. This copies the complete name of the attribute (including relations, aggregate functions and subattributes) to the Windows clipboard, so it can be pasted into a COM script in a text editor. **(15433)**

Driving Simulator Interface

⊕ The simulator can now add vehicles (with individual vehicle types) to the network and remove vehicles from the network during the simulation run. The simulator can also take control over "normal" Vissim vehicles during the simulation run (and pass it back to Vissim).
This requires some functional changes in the interface:
All vehicles are identified by the Vissim vehicle number (ID). Vissim sends data of all vehicles (including simulator vehicles) to the simulator (including a new flag "controlled by Vissim"). Usually, the simulator can ignore data of simulator vehicles (not "controlled by Vissim"), with one exception: For new vehicles added by the simulator, the simulator must send a temporary CreateID to Vissim which is then sent back from Vissim together with the actual vehicle number assigned by Vissim. In all subsequent time steps, the simulator must send this Vissim vehicle number to Vissim for identification of the vehicle. **(15307 🛑)**

Evaluations

⊕ New result attributes "Demand (latent)" and "Delay (latent)" for vehicle inputs and parking lots. These contain the same values as the vehicle network performance evaluation but split per vehicle input / parking lot. The new vehicle input evaluation / parking lot evaluation needs to be activated under evaluation configuration in order to collect these results during a simulation run, and the evaluation period and time interval can be set there as well. For both types of network objects, there are now also result lists. **(14090)**

File Handling

- If a 3D model file (static or vehicle/pedestrian) is not found in the folder specified in the filename attribute, the model file is now searched automatically in the folder Exe\3DModels of the Vissim installation, including all subfolders. The new path is saved in the filename attribute when the network is saved (*.inpx file, *.vissim file, *.tra file for scenario management). **(15356)**

Graphics

- The provider for live 3D buildings is now MapTiler. (MapBox buildings shown in previous versions will cease do work by mid of September 2020.) **(15305)**
- With active turn value visualization, movements selected in the synchronized list Nodes / Movements are highlighted in the network window as well. **(15342)**

I/O Installation

- More service pack notifications: After deploying a service pack that is newer than the installed service pack, a notification is now displayed more often than before. Regardless of this, recent service pack notifications are still permanently displayed on the start page. **(14702)**

Installation

- Update of CodeMeter Runtime: The software manufacturer WiBu Systems has informed us about an error in the component 'CodeMeter runtime', which we use for the license protection of our software. The bug affects the TCP/IP communication of the license server. It constitutes a security issue, but only has an impact in case of a targeted attack on the network. With this service pack, an update of the affected component is installed, fixing the problem. For more information, see https://www.wibu.com/en/support/security-advisories.html **(15525)**

Network Editor

- The measuring tape (ruler icon) works now also upstream on link sequences. **(14217)**
- When adding a circular link through the context menu in the network editor, the diameter and number of spline points can now be entered with the keyboard. **(12973)**

OpenDRIVE Import

- Improved error handling for *.xodr files which don't conform to the OpenDRIVE standard. **(14650)**

Presentation

- AVI recording in 2D mode. See the document "Vissim 2021 - What's new.pdf" and the manual for details. **(5610)**
- Keyframes without a camera position can be used now to crossfade between layouts even during a camera movement. **(14195)**

Scenario Management

- The format of the time stamps in the log (visible in the Project Structure dialog) is now always YYYY-MM-DD HH:MM:SS, independent of the Windows settings. **(15462)**

Signal Control

- The signal controller DLL interface sends C2I (car to infrastructure) data for all approaching vehicles now to each controller requesting that. (Currently, this can be used only with a custom-built controller DLL for the SC type "External".) **(15408)**

Signal Controll

- New integrated controller type "Ramp Metering Controller". With the new special editor mode "Create ramp metering facility", all required network objects are created automatically with a few clicks on the on-ramp and on the freeway. See the document "Vissim 2021 - What's new.pdf" and the Vissim manual for details. **(13004)**

User-Defined Attributes

- The data source type for a new attribute is now by default "Formula" if the object doesn't support Data UDAs. **(14484)**

Vehicle Simulation

⊕ A warning message is now written to the messages window if a vehicle passing a parking routing decision cannot be assigned a parking space because there is no way back to the vehicle's current route (including subsequent ends of surrounding nested routes) from any of the available parking spaces. **(15407)**

VissimCL

⊕ If no values for random seed and/or simulation run number are set through the command line, the random seed from the loaded network is used, respectively the highest recorded simulation run number + 1. **(14580)**

Viswalk

⊕ Grid cells which belong only partially to areas or ramps or which are partially filled by obstacles are not considered walkable ground anymore. **(14855 ⬤)**

⊕ New attribute "Path choice method" for static routing decisions, partial routing decisions and pedestrian route locations. This attribute defines how the pedestrian selects one of multiple possible ramps or elevators between the current area (with the decision/location) and the next routing location. The default value is "Area center" which causes the pedestrian to select the ramp or elevator which provides the shortest total crow fly distance from the center of the current area to the ramp (to further ramps) to the center of the area with the next routing location. The new value "Pedestrian posiiton" starts the distance calculation from the current position of the pedestrian (when they choose their path to the next routing location, i.e. when arriving on the area with the current location). **(14424)**

⊕ New relation and new attribute at a pedestrian, both pointing to the closest other pedestrian (minimum distance from center to center), plus a new attribute showing that distance. **(15143)**

⊕ New result attributes for area measurements, areas and ramps: minimum, average and maximum distance to the temporarily closest other pedestrian over all pedestrians over all time steps in the respective time interval. **(15144)**

Workspace

⊕ New GUI for the handling of named network editor layouts, list layouts, chart layouts and camera positions: The drop-down list has been replaced by a button which opens the same GUI as for user-defined color schemes. This allows to select, add, overwrite, rename and delete named layouts / camera positions. **(10737)**

✓ Fixed Bugs

Evaluations

✓ The fuel consumption calculated by an EmissionModel.DLL assigned to a vehicle type is now shown correctly in the vehicle network performance evaluation. **(15409)**

Lists

✓ Column filters can now handle numbers between 2^31 and (2^32)-1. **(15182)**

Meso Simulation

✓ A vehicle leaving a micro section with its front end in the same time step when its rear end was still on a different link and when another vehicle entered that link with overtaking on the same lane enabled could cause a crash. This problem has been fixed. **(15390 ⬤)**

Network Editor

✓ If left-hand traffic is selected in the network settings, the major flow definition causes left-turn movements to have priority now at their conflict with opposing right-turn movements. Turns which don't cross the major flow have always priority over turns which cross the major flow in at least one direction. **(15396)**

Signal Control

✓ An invalid evaluation graph causes only one warning message now upon opening the external GUI of a signal controller. **(15436)**

Vehicle Simulation

✓ Problems with the handling of changed desired speed for platoon vehicles have been fixed. **(14500 ⬤)**

⬤ Breaking Changes

Driving Simulator Interface

- ⚠ Some minor modifications and a recompilation are required for existing simulators to be used with this version because of a non backward compatible extension of the functionality. **(15307 ⊕)**

Meso Simulation

- ⚠ Networks with micro sections and overtaking on the same lane can have simulation results differing from previous versions. **(15390 ✓)**

Vehicle Simulation

- ⚠ Simulations with platooning and changing desired speeds can have results differing from previous versions. **(14500 ✓)**

Viswalk

- ⚠ The new calculation of walkable ground can cause simulation results to differ from previous versions. **(14855 ⊕)**

2021.00-00 [89829]	2020-07-30

⊕ New Features and Changes

ANM Import

- ⊕ Vehicle class specific desired speeds (e.g. exported from Visum as speed per TSys) can now be imported. **(13279)**

Data Model

- ⊕ Links have the new calculated attribute "WktPolyline" which contains a list of the spline points of the link (including start and end point) in Vissim world coordinates in WKT LINESTRING format.
  The new calculated attribute "WktLocation" contains the absolute position of the link's label position in Vissim world coordinates in WKT POINT format. **(15171)**

Dialogs

- ⊕ The search filter in the attribute selection dialog considers sub-attributes now as well as relations. The character '\' separates the corresponding levels. **(15147)**
- ⊕ Up to 5 previously selected attributes are now offered for selection in an additional drop-down box in the attribute selection dialog. Attributes which have been selected most recently within the last hour are shown with the highest priority and then (over the course of two weeks) eventually replaced with more often selected attributes. **(15146)**

DriverModel.DLL Interface

- ⊕ The subdirectory Exe\DriverModelData\ is not required anymore by Vissim and its location is not passed to the DLL anymore. **(15216 ⚠)**

Evaluations

- ⊕ New result attributes for parking spaces, parking lots, parking lot groups, parking routing decisions and vehicles. New values for the vehicle attribute "parking state". See the document "Vissim 2021 - what's new.pdf" for details. **(2659 ⚠)**
- ⊕ The vehicle record shows now the value from the end of the time step for all routing and platooning attributes of vehicles, i.e. after the vehicle has passed a routing decision and maybe a platoon lead vehicle has left the network. **(15217 ⚠)**

File Handling

- ⊕ New option to save the network and all required additional data inside a single "model archive" file (*.vissim) and to open such model archive files. See the document "Vissim 2021 - What's new.pdf" and the manual for details. **(7985)**

Graphics

- ⊕ Live buildings are now automatically hidden if their footprint overlaps with the footprint of a static 3D object. In addition, specific live buildings can be hidden by selecting them in the new special editor mode "Edit building visibility". See the document "Vissim 2021 - What's new.pdf" for details. **(13967)**

- Several additional options in color schemes for parking lots. See the document "Vissim 2021 - What's new.pdf" for details. **(14419)**
- The OSM background maps have been removed due to legal reasons. PTV maps in four color gradings are offered instead. **(15241)**
- The legend in the network editor shows percentage values of attributes now as 0% to 100%. (In the color scheme dialog, the values still need to be entered as decimal value between 0.0 and 1.0!) **(14925)**
- The rendering in 3D mode is now handled in a separate thread, so the user interface is not blocked when a scene with many 3D polygons needs to be shown. **(12911)**
- User-defined color schemes can now be named and added to the list of predefined color schemes in the color scheme dialog. They can also be selected, renamed, overwritten and deleted there. Named color schemes are saved in the layout file and can be read additionally from any layout file to extend the current list of color schemes. **(11578)**

Installation

- The CodeMeter Runtime deployed with PTV Vissim has been updated to CodeMeter 7.00a. **(14778)**

Lists

- After a new network object has been added, it is automatically selected now, and the global selection is changed accordingly if the list window is currently synchronized. **(13931)**

Network Editor

- If labels for multiple queue lengths overlap, the largest numerical value is always shown now. **(14422)**
- Special editor mode for the creation of all network objects required for a signal controller of the new type "Ramp Metering". See the document "Vissim 2021 - What's new.pdf" for details. **(14387)**
- Special mode for creation of all the network objects required for a controller of the type "2-Stage Controller". See the document "Vissim 2021 - What's new.pdf" for details. **(14030)**
- Special mode for creation of all the network objects required for a controller of the type "Pedestrian Crossing". See the document "Vissim 2021 - What's new.pdf" for details. **(14031)**
- Special mode for creation of all the network objects required for a controller of the type "Railway Crossing". See the document "Vissim 2021 - What's new.pdf" and the manual for details. **(14404)**
- The context menu key on the keyboard (usually to the left of the right Ctrl key) opens the context menu for the selected network object(s) now in the network editor, not necessarily the object(s) at the current position of the mouse pointer. **(14515)**

Presentation

- New animation recording attribute "Recording scope" with the possible values "every run" (default), "first run only" and "final run only" which can be set to define in which simulation run(s) out of a multirun the respective files are to be recorded. **(14429)**
- Storyboards and ANI recordings have the new attribute "Recording scope" with the possible values "every run" (default), "first run only" and "final run only" which can be set to define in which simulation run(s) out of a multirun an video / animation file is to be recorded. **(14180)**

Simulation

- A formula used for a route can now access both attributes of the route and attributes of the vehicle/pedestrian through the temporary relations ROUTE respectively VEHICLE / PEDESTRIAN, e.g. [ROUTE\UDA1] or [VEHICLE\SPEED]. **(14332)**
- New network object "attribute modification": Similar to an event-based script, an attribute modification can be executed at predefined times during a simulation run, to set a specific attribute of all objects of a specified type to a new value calculated by a specified formula. See the document "Vissim 2021 - What's new.pdf" and the Vissim manual for details. **(15271)**

VissimCL

- ⊕ The syntax for command line parameters has been changed to GNU syntax:{noformat}
  -r 42
  --randomseed=42
  -s 5
  --simulationrun=5
  -t 16
  --threads=16
  -v
  --verbose
  --version
  -h
  --help
  {noformat} **(15180)**

Viswalk

- ⊕ New pedestrian attribute "Orientation angle" showing the angle between the orientation of the pedestrian and the x axis in degrees (positive x axis is 0°, positive y axis is 90°).
  The pedestrian attribute "Orientation" has been renamed to "Orientation vector". **(14285)**
- ⊕ New result attribute "Required Safe Egress Time" ("RSET") in the grid cell evaluation. This attribute contains the latest simulation time in the time interval when at least one pedestrian was inside that grid cell. It can be used for color schemes for pedestrian areas, ramps and stairs. **(13640)**
- ⊕ The BIM Import can now import stairs with one of the geometry types TwoStraightRunStair, QuarterWindingStair, QuarterTurnStair, HalfWindingStair, HalfTurnStair, TwoQuarterWindingStair or TwoQuarterTurnStair from *.ifc files. **(12822)**
- ⊕ The CAD import for pedestrian areas supports the *.dwg 2020 format now. Units in *.dwg files are now also imported and the polygons are scaled accordingly. **(13532)**

Workspace

- ⊕ The column widths of the graphic parameter flyouts are now remembered between sessions. **(8037)**

❗ Breaking Changes

DriverModel.DLL Interface

- ❗ A DLL expecting the location of the subdirectory Exe\DriverModelData\ to be passed from Vissim might not work anymore. **(15216 ⊕)**

Evaluations

- ❗ The vehicle record can show different values for routing and platooning attributes compared with previous versions. **(15217 ⊕)**
- ❗ Vehicle record files containing the attribute "Parking state" can show different values compared with previous versions. **(2659 ⊕)**

Vehicle Simulation

- ❗ Changing the length of a vehicle during a simulation run can cause results to differ from previous versions. **(14782)**
- ❗ The active option "Enforce absolute braking distance" can cause simulation results to differ from previous version. **(15003)**
- ❗ The value "Wait" for the parking routing decision attribute "Full occupancy behavior" in combination with long parking spaces fitting two vehicles can cause simulation results to differ fro previous versions. **(14784)**