

# What is new in PTV Viswalk 2021

The background of the page is black. In the lower half, there are several overlapping, semi-transparent geometric shapes in shades of red and orange, creating a dynamic, abstract composition that suggests movement and modern design.

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## Preamble

This document provides an overview of PTV Viswalk's important updates from version 2020 to Version 2021 regarding handling and program behavior. The functionality previously added in version 2020 service packs is not included in this document. Please see the version 2020 service pack release notes for these features. The release notes for versions 2021.00-xy include additional new features that are not covered in this highlight document.

Detailed descriptions of how to use the new functionality can be found in the Vissim 2021 online help and in the document "Vissim 2021 - Manual.pdf".

# 1 Pedestrian Simulation

## 1.1 Formula Routes

A formula used for a route can now access both attributes of the route and attributes of the pedestrian through the temporary relations ROUTE respectively PEDESTRIAN, e.g. [ROUTE\UDA1] or [PEDESTRIAN\SPEED].

## 1.2 Nearest Neighbor

For the evaluation of distances between pedestrians, there are some new relations and result attributes:

Pedestrians have a new relation and new attribute, both pointing to the currently closest other pedestrian (minimum distance from center to center), and a new attribute showing that distance.

Area measurements, areas and ramps have new result attributes for the minimum, average and maximum distance to the temporarily closest other pedestrian over all pedestrians over all time steps in the respective time interval.

## 1.3 RSET

The grid cell evaluation has the new result attribute "Required Safe Egress Time" ("RSET"). 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.

## 1.4 Stairs Selection

When one or more stairs (ramps) are available to move from one level to another, pedestrians consider their current position (instead of only the position of their current route location's area) when assessing walking distances in the decision process.

## 1.5 BIM Import

Stairs with one of the geometry types TwoStraightRunStair, QuarterWindingStair, QuarterTurnStair, HalfWindingStair, HalfTurnStair, TwoQuarterWindingStair or TwoQuarterTurnStair can now be imported from \*.ifc files.

## 1.6 CAD Import

The import for pedestrian areas supports the \*.dwg 2020 format now. Units in \*.dwg files are now also imported and the polygons are scaled accordingly.

## 2 Visualization

### 2.1 Hiding Live 3D Buildings

Live 3D buildings (from MapTiler) 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” which can be entered through the context menu of the network editor in 3D mode. For the selection of live buildings, single left mouse-click (optionally with Ctrl for toggling without changing the rest of the current selection) and rectangular rubberband (ditto) are available. All selected buildings can then be made visible or invisible, according to the checkbox in the flyout toolbar. (The automatic hiding when overlapping cannot be overridden.)

### 2.2 AVI Recording in 2D Mode

Video files can now also be recorded in 2D mode. The mode of a storyboard is defined by the mode of its first camera position. A camera position in 2D mode points to its x/y coordinates in the center, with the total extent of the network visible section in y direction given in the attribute ExtentY. The extent in x direction is determined from ExtentY and the storyboard resolution. If a camera position in 2D mode refers to a pedestrian, that agent is kept in the center of the view while the camera position is active.

## 3 Handling

### 3.1 Attribute Selection Dialog

Up to 5 previously selected attributes are now offered for selection in an additional drop-down box. 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.

The search filter considers sub-attributes now as well as relations. The character '\' separates the corresponding levels.

### 3.2 Named Color Schemes

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 into the current layout data.

### 3.3 Context Menu Key

The context menu key on the keyboard (usually to the left of the right Ctrl key) opens the context menu for the currently selected network object(s) now in the network editor, *not necessarily* the object(s) at the current position of the mouse pointer.

## 4 Other

### 4.1 Attribute Modifications

The “Scripts” menu has been renamed to “Actions” because a second type of triggered actions has been added to the data model. An attribute modification sets a specified attribute of some or all objects of a specified type to a value calculated by a specified formula.

The attribute modification is executed at the specified time(s): before or after the start or end of the simulation run or at the start or end of each time step (optionally every x simulation seconds and/or limited to a certain time span).

The formula can reference the same attribute, as well as other attributes of the respective object or - through the function TableLookup() - of other objects. This allows to add up a total value from values of several time steps without requiring any scripting.

The objects to be affected can be filtered by having a formula (result type Boolean or numeric) in the attribute “Filter”. The specified attribute is modified for an object of the affected type only if the attribute “Filter” is empty or if the formula evaluates to true or non-zero (but not empty) for that object when the attribute modification is executed.

### 4.2 Model Archive

The file open and file save dialogs offer the new file type “Model Archive (\*.vissim)”. A Vissim network which is not under scenario management can now be saved together with all related files as a single model archive file which is internally a ZIP archive. This archive contains the \*.inpx file and \*.layx file, the evaluation database files and all files referenced by the \*.inpx file, e.g. signal controller data and program files, 3D model files, background image files, script files and so on, within a fixed subfolder structure. When a \*.vissim file is opened in Vissim, it is extracted to a new temporary folder, with the same predefined subfolders. Any original folder structure is **not** restored. Saving any changes to the network affects the \*.inpx file in the temporary folder and the model archive file but not the original \*.inpx file.

### 4.3 Recording in Multirun

Storyboards and Animation 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 the respective files are to be recorded.

## 5 Technical Changes

### 5.1 CodeMeter Runtime

The CodeMeter Runtime deployed with PTV Vissim has been updated to CodeMeter 7.0.

### 5.2 Python

PTV Vissim 2021 is the last release supporting Python 2.7 for scripts in addition to Python 3.x. Future releases will only support Python 3.x. Custom scripts will need to be adjusted to Python 3.x in order to sustain compatibility with future releases.

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