



What's new in PTV Vissim/Viswalk 2027

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Imprint

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Content

Preamble	4
1 PTV Hub	5
2 Vehicle Simulation	5
2.1 Connector Links: „true“ Merging Behavior	5
2.2 Incident Evaluations – new Attributes and Pedestrians.....	6
2.3 Examples - new Structure and new Examples.....	7
2.4 OpenDRIVE Improvements - Lanes and roadMark Elements.....	9
2.5 OpenDRIVE Improvements - geoReference new Options [2026 SP10].....	9
2.6 OpenSCENARIO-Export - Improvements [2026 SP 06]	10
2.7 Emission Calculation aixzellent-EMaaS [2026 SP 06]	11
3 Pedestrian Simulation	11
3.1 Exact Route Decisions and Exact OD-Matrices.....	11
3.2 Configurable Method for Waiting Behavior	13
3.3 Alighting Delay [under development]	13
3.4 Passenger Exchange Record [under development]	13
3.5 Conditions for the Execution of Pedestrian Routing Decisions.....	13
4 Signal Control.....	14
4.1 Improved Default List Layout and Renaming	14
4.2 RBC – extended detector record TSP [2026 SP 05]	14
5 Usability.....	14
5.1 Transparency for Background Images	14
5.2 Decimal Places for Font Sizes.....	15
6 Technical Changes	15
6.1 CodeMeter Runtime	15
6.2 Python	15

Preamble

This document provides an overview of PTV Vissim/Viswalk's important changes from version 2026 to version 2027 regarding handling and program behavior. Features, which have already been added in service packs of version 2026, are only partially covered in this document. Please see the version 2026 release notes for more of these features. At this time, future enhancements to Vissim 2027 will be described in the Vissim 2027 release notes.

Detailed descriptions on how to use the new functionality can be found in the Vissim 2027 online help and in the document VISSIM - MANUAL.PDF.

1 PTV Hub

Vissim 2027 is integrated with PTV Hub, the cloud-based platform that connects cloud/web apps and desktop applications. New developments in PTV Hub and Vissim 2027 expand both worlds equally and include, for example improvements when multiple persons work on the same model together in the form of editing awareness and support for merging and conflict handling.

An overview on the extensions of PTV Hub 2027 can be found through the release communication on PTV Hub - this document here focuses on the highlights which are related to Vissim.

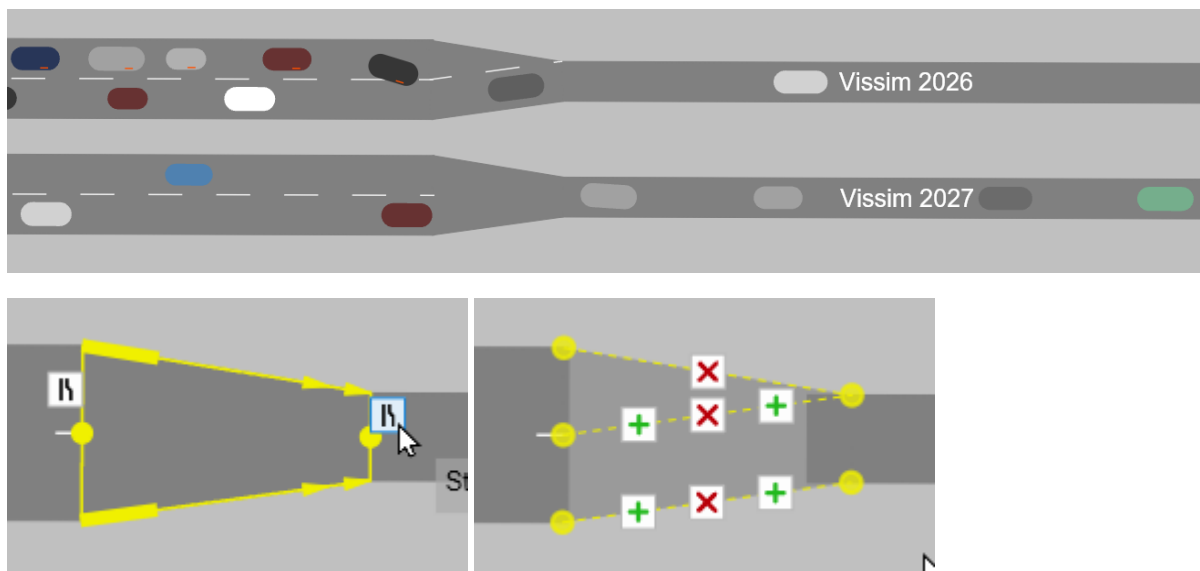
PTV Hub features are only available for PTV Hub-ready desktop licenses and sometimes require that a Vissim model is saved as a cloud model in PTV Hub (e.g. editing awareness).

2 Vehicle Simulation

2.1 Connector Links: „true“ Merging Behavior

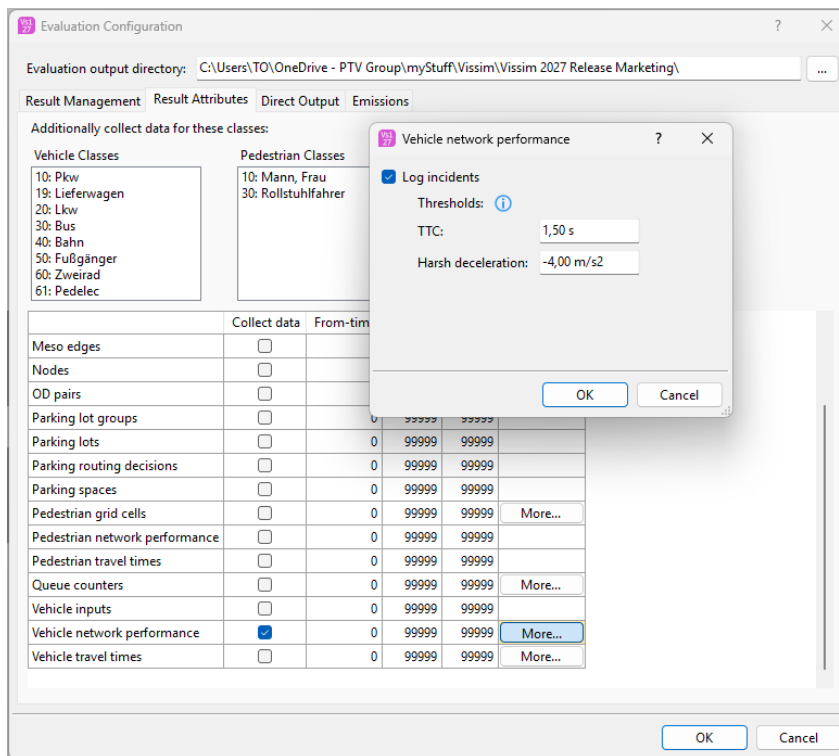
The previously introduced change to model connector links with changing numbers of lanes has been extended. It is now possible not only for lanes to be added or disappeared, but also for two or more lanes to merge along a connector link. In conjunction with the new arranging behaviour when approaching these merging situations, Vissim 2027 now enables a fair merging of traffic.

The new modelling capabilities can be accessed via the lane allocation editor for connector links.



2.2 Incident Evaluations – new Attributes and Pedestrians

Incident detection in the **vehicle network performance** evaluation for the type **collision** now also takes into account incidents between vehicles and Viswalk pedestrians.



The attributes in the direct output for incidents have been extended. For collisions between vehicles (highlighted in green or blue in the following screenshot), the following attributes are calculated and output:

- **Speed_Veh1 [m/s]** and **Speed_Veh2 [m/s]** - the speed of both vehicles at the beginning of the incident
- **Orientation_Veh1 [deg]** and **Orientation_Veh2 [deg]** - the angle of the two vehicles at the beginning of the incident
- **Collision type** - depending on the angle between the two vehicles, e.g. **rear-end** or **crossing** at the beginning of the incident
- **RelSpeed [m/s]** - the relative speed between the two vehicles at the beginning of the incident

For **Harsh deceleration** incidents, the data of the second vehicle is output if the deceleration was triggered by a second vehicle.

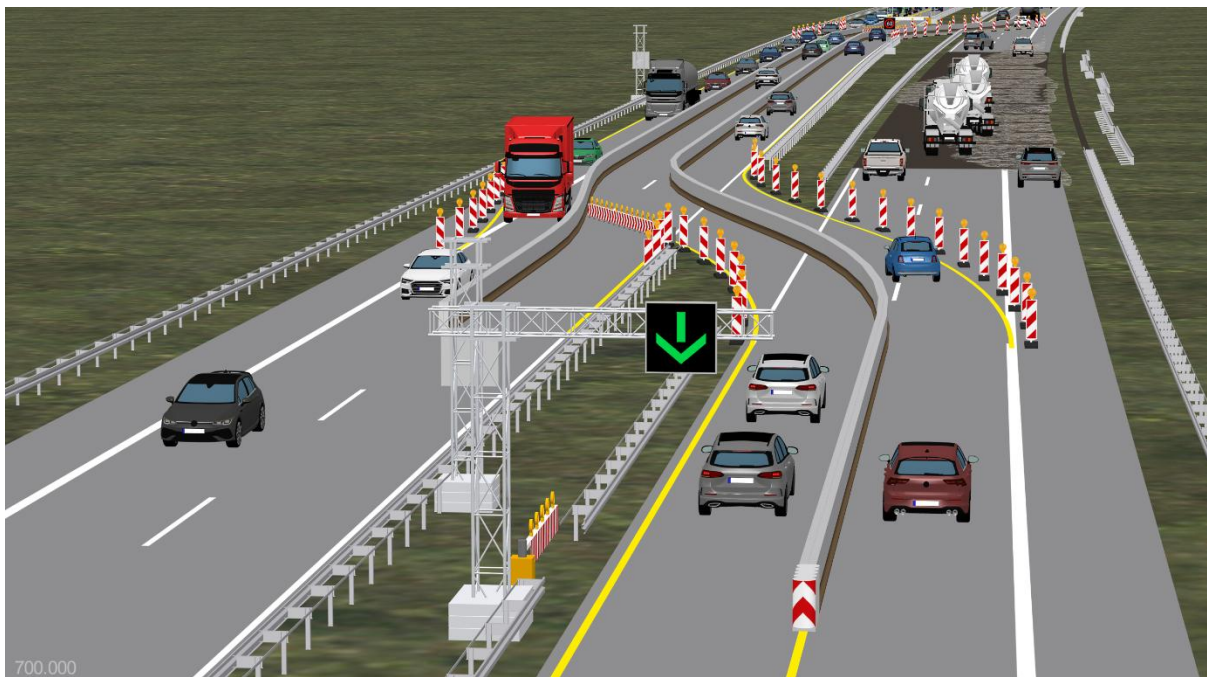
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1	Incidents protocol																					
2																						
3	File C:\Users\TOD\OneDrive - PTV\Groups\South\Sim\ISSH\2302\6\Incidents more ambulances\Manual\Example.inpx																					
4	Comment																					
5	Date 27/05/2024 12:29:01																					
6	Application PTV Vissim 2027.00-00 [306793]																					
7																						
8	End time	Start time	VehNo.	VehType	Link	Veh	Lane	Position	Speed	Orientation	VehNo.	VehType	Link	Veh	Lane	Position	Speed	Orientation	VehNo.	VehType	Link	Veh
9	24.1	24.1	11	100	10	1	10.635				21	200	10	1	30.857							
10	23.35	23.35	23	100	10	1	4.827				21	200	10	1	61.511							
11	31.5	30.4	23	100	10	2	45.431															
12	40.1	40.1	17	100	4	1	58.831															
13	40.35	39.95	16	100	12	1	227.935															
14	52.7	52.05	27	100	4	1	10.637				12	100	4	1	135.153							
15	52.75	52.75	17	100	5	1	70.097															
16	53.1	53.1	31	100	12	1	10.644															
17	62.35	62.25	12	100	10006	1	5.852															
18	63.85	63.3	43	100	3	1	131.666															
19	73.35	72.85	44	100	2	1	221.259				33	100	2	1	236.666							
20	74.25	74.25	47	100	12	1	112.23															
21	74.8	74.8	27	100	5	1	77.483															
22	75.85	75.85	52	100	12	1	11.937															
23	77.25	75.95	196	100	10	2	34.64															
24	81.5	81.5	32	190	5	1	77.454				55	100	10	1	124.789							
25	83.45	83	41	200	10010	1	53.297				46	100	10010	2	53.676							
26	86.3	86.3	58	100	1	1	193.382				53	100	1	1	230.801							
27	87.55	87.3	58	100	1	2	207.856				53	100	1	1	230.801							
28	91.6	91.25	60	100	1	1	202.339				53	100	1	1	217.596							
29	101.25	101.25	66	100	12	1	22.869															
30	108.4	108.35	51	100	2	2	301.054				44	100	2	1	306.601							
31	110.4	110.35	60	100	10006	1	5.466															
32	114.25	114.25	77	100	12	1	11.041															
33	115.1	115.1	42	100	5	1	77.272															
34	117.1	117.1	79	100	12	1	11.619															
35	117.2	117.2	53	100	5	1	77.735															
36	117.95	116.75	74	100	7	1	61.785				71	100	7	1	90.743							
37	120.35	120.3	76	100	10006	1	5.405															
38	122.4	122.35	60	100	5	1	77.607															
39	123.15	123.15	69	100	10	1	16.515															
40	131.8	131.8	76	100	5	1	77.852				87	100	10	1	32.031							
41	137	137	36	100	6	1	66.608															
42	143.5	142.7	32	100	12	2	223.317															
43	145.35	145.4	39	100	9	1	147.13				89	100	10010	2	0.365							
44	145.35	145.4	39	100	9	1	147.13				89	100	9	1	85.703							
45	145.75	145.05	63	200	7	1	193.554				14	100	7	1	82.6							
46	147.65	146.75	36	100	6	1	73.835															
47	149.65	149.25	106	100	1	1	87.386				105	100	1	2	31.588							
48	153.3	152.35	110	100	10	2	20.956				109	200	10	1	61.676							

2.3 Examples - new Structure and new Examples

The folder structure of the examples has been cleaned up and is no longer separated into DEMO and TRAINING. There is only one entry point EXAMPLES. Within this level, the examples have been sorted by use cases.

In addition, the existing examples have been expanded to include the following models (which have also been supplemented with service packs for Vissim 2026).

- \EXAMPLES\TRAFFIC INCIDENT\ROADWORKS WITH REVERSIBLE LANE\ROADWORKS WITH REVERSIBLE LANE.INPX
- \EXAMPLES\RAILROAD\RAIL CROSSING.ACTUATED BUILT-IN\RAIL CROSSING WITH BARRIERS.INPX
- \EXAMPLES\PARKING\MULTI-STOREY CAR PARK\MULTI-STOREY CAR PARK.INPX

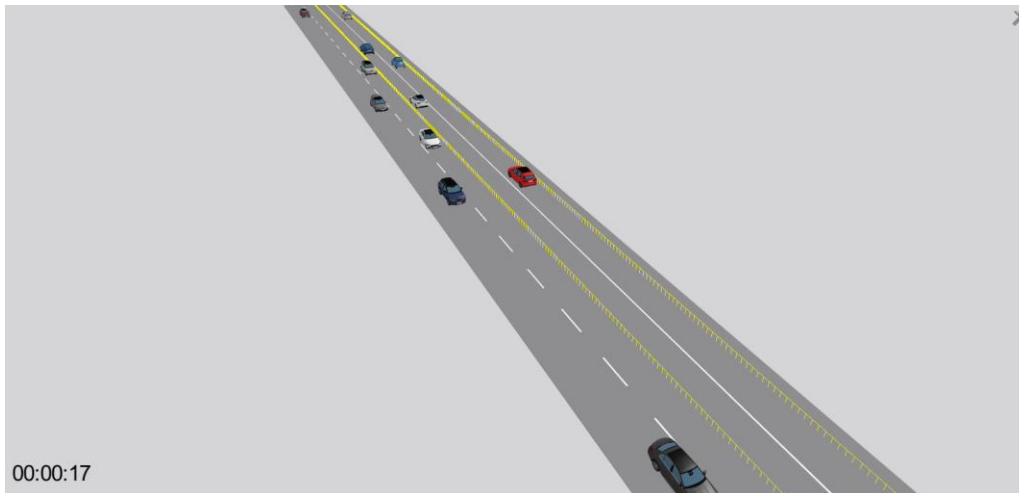




2.4 OpenDRIVE Improvements - Lanes and roadMark Elements

The OpenDRIVE import now takes into account information from roadMark elements and sets allowed and forbidden lane changes in Vissim depending on the roadMarkType solid.

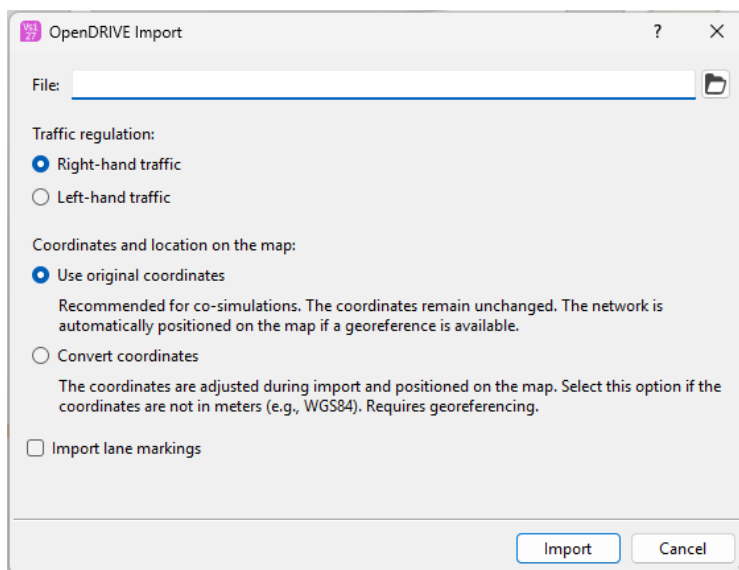
This is available as an option in the revised OpenDRIVE **import** dialog.



2.5 OpenDRIVE Improvements - geoReference new Options [2026 SP10]

The OpenDRIVE import now offers different options that affect the x-y coordinates and the reference point in Vissim in conjunction with a geoReference in the OpenDRIVE file. The new default setting **Use Original Coordinates** allows you to keep the x-y coordinates of the xodr file and place the network correctly georeferenced on the background map. Obtaining the x-y coordinates simplifies the integration of Vissim with other software that uses the same x-y coordinates or reference point to convey the position of objects during simulation.

This is available as an option in the revised OpenDRIVE **import** dialog.



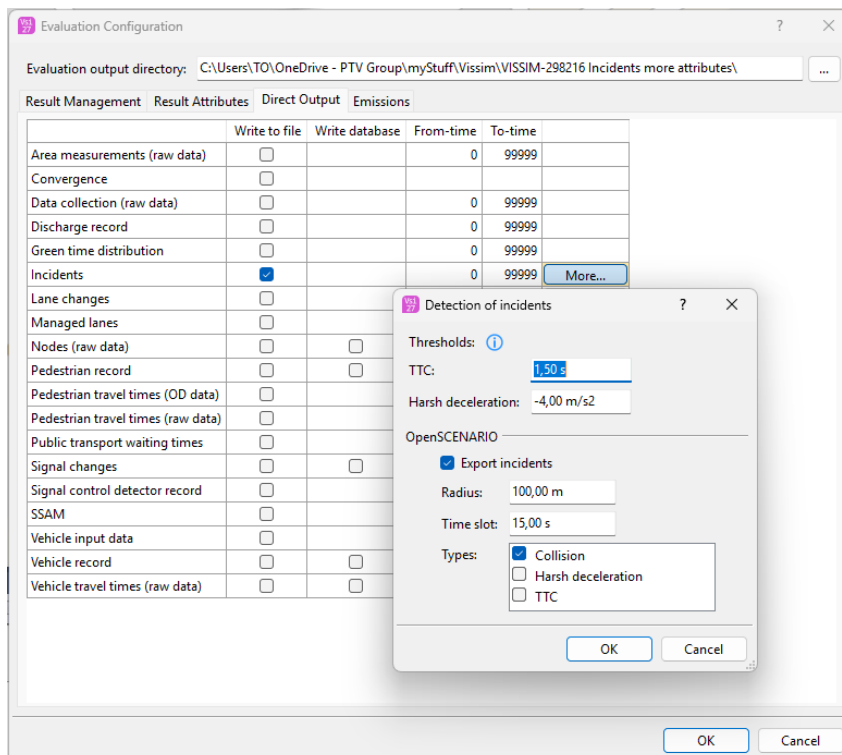
2.6 OpenSCENARIO-Export - Improvements [2026 SP 06]

Vissim allows the export of incidents according to the OpenSCENARIO XML 1.3.1 standard.

OpenSCENARIO is an open standard that is based on OpenDRIVE and, in contrast to its description of static elements, i.e. the traffic infrastructure, describes dynamic content, such as e.g. Trajectories or maneuvers of vehicles and road users. Vissim simulates the dynamics of road users and thus provides the basis for the content of OpenSCENARIO.

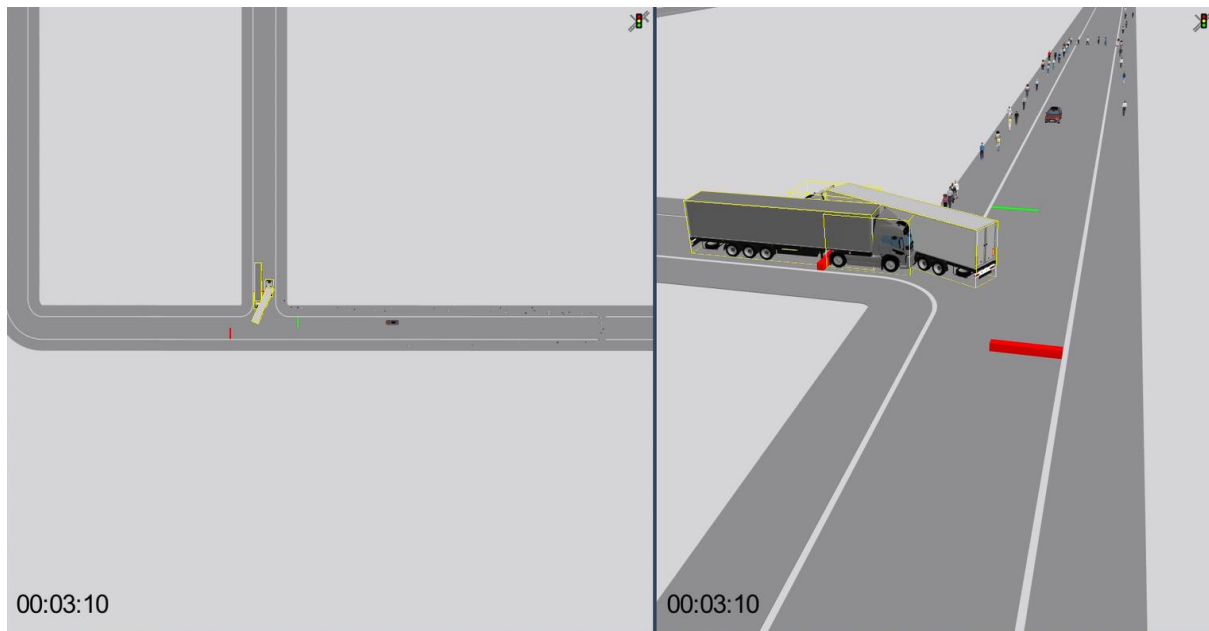
OpenSCENARIO is frequently used in the context of development and testing of automated driving functions and describes a scenario as a dynamic scene for a vehicle that is being tested. Particularly interesting scenarios depict incidents, such as collisions or harsh decelerations.

The OpenSCENARIO export is therefore part of the **direct output** evaluation of **incidents** and represents a particularly detailed form of result export of this evaluation. OpenSCENARIO files can be created for each individual incident of a simulation run, whereby it is possible to define a time window, as well as a spatial radius around the vehicles that trigger the incident to narrow down the scenario to the area and time of interest.



The OpenSCENARIO export has been enhanced with the following features:

- If the Vissim model is based on an OpenDRIVE import, then the XODR file will be referenced in the XOSC file.
- Vehicles with multiple segments are exported.
- The first vehicle referenced in the XOSC file is the incident's ego vehicle with the first-person perspective.
- For incidents between two vehicles, two XOSC files are exported with the respective vehicles involved in the first-person perspective.



2.7 Emission Calculation aixzellent-EMaaS [2026 SP 06]

The Bosch Emissions Calculation module has been renamed aixzellent-EMaaS. The emission calculation service is no longer provided by Bosch, but by Theis Consult.

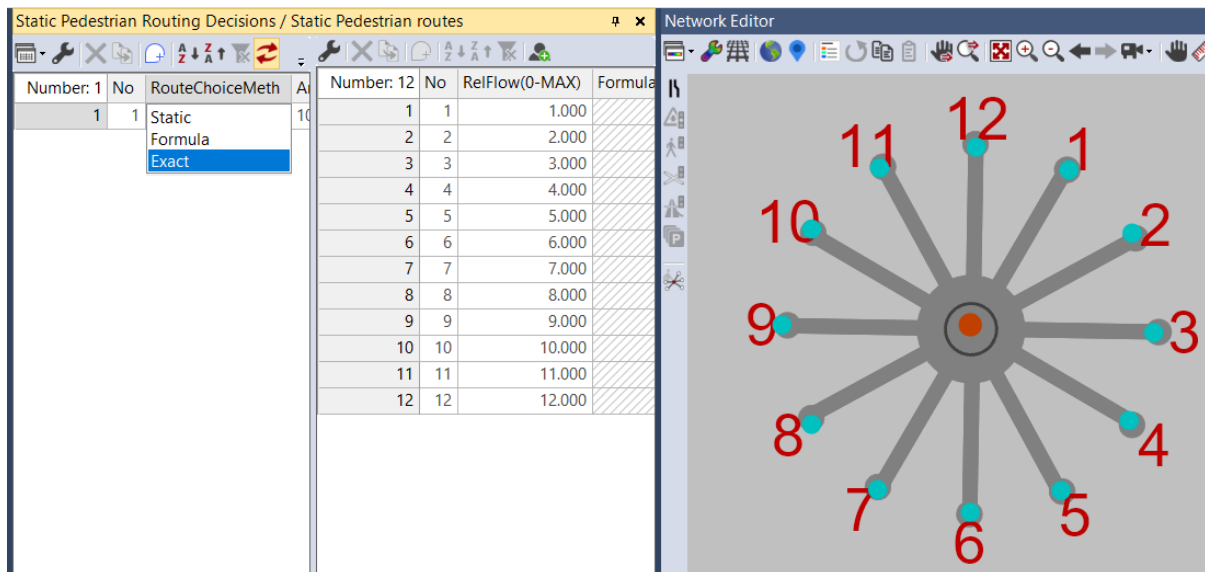
3 Pedestrian Simulation

3.1 Exact Route Decisions and Exact OD-Matrices

This feature can be summarized as “what is possible for inputs – making them “exact” - is now also possible for route decisions”.

In detail: when pedestrians decide for a Route at Route Decisions of type “Static” they do so with a numerically fixed probability defined as “Relative flow”. This implies that the ratio of pedestrians assigned to each route at the end of a simulation run can be different from the ratio of Relative flows. Only in the average of many simulation runs the Relative flows will be recovered.

This “Static” method has been amended by an “Exact” method. If “Exact” is chosen as “Route choice method” of a Pedestrian Routing Decision (Static or Partial Route alike) then the absolute numbers defined as Relative flows will be implemented exactly for pedestrian route choice for the number of pedestrians that matches the sum of Relative flows.



For this route decision the Route Choice Method has been set to the new option “Exact”. Relative flows have been set to numbers between 1 and 12. The red numbers in the network editor show counts of pedestrians from Travel Time Measurements with 78 pedestrians having been set into the simulation. One can see that the Relative flows are exactly implemented.

If fewer pedestrians than the sum of Relative flows execute the Route Decision then there will be some stochastic variation left, but it is less than for Route Decisions with Route choice method “Static”.

If more pedestrians than the sum of Relative flows execute the Route Decision then the counting starts anew such that the Relative flows are again exact when the sum of Relative flows is again reached.

One can easily envision the difference between Route choice methods Static and Exact as two ways to draw balls from an urn: the urn has balls of different color, each color representing a route. To make a route decision a pedestrian draws a ball from the urn. In the case of “Static” the pedestrian afterwards puts the ball back into the urn. In the case of “Exact” the ball is left aside and only when a pedestrian finds the urn empty, they put back all balls into the urn to then draw again one of the balls. In the first case, the probability to draw a ball of a particular color is the same for all pedestrians. In the second case, the sequence how the balls are drawn varies, but in the end all balls are drawn implying that the number of balls of each color is determined from the start.

Note: If there is a Pedestrian Input on the Area with the Route Decision and if the Input is “Exact” and if the the sum of Relative flows matches the number of pedestrians set into the simulation at the Input then the combined Input / Route Decision is Exact. If this is the case for all Input / Route Decisions then the entire OD matrix is exact. When you use Exact Route Decisions and Exact Inputs then Viswalk assumes that they are meant to be exact in combination. If you open the OD matrix dialog and there is a mismatch between the number of pedestrians generated at the input and the sum of Relative Flows, then this is indicated to you when you close the OD matrix dialog and you are asked, if you want to scale Relative flows to match the input.

3.2 Configurable Method for Waiting Behavior

So far, pedestrians dwelling on an area along their route showed a different waiting behavior than pedestrians waiting to board a PT vehicle. In the former case they stop walking actively as soon as they reach an edge of the waiting area but move slightly when other pedestrians come near. In the latter case, they decide for a coordinate to wait, go there, and then wait without moving at all. Now, both methods can be used for both situations. Pedestrians can wait at fixed spots distributed over the waiting area, when dwelling along their route and vice versa: pedestrians can just stop moving actively, when reaching a PT waiting area. As a user, you configure this with the help of new attributes for areas.

3.3 Alighting Delay [under development]

[This feature is still under construction and will be available in a service pack.]

When passengers leave a train, pedestrian flow through the door can be smaller than one would expect from just its width. This can be, because there is a significant height difference between the platform and the train's floor or because some passengers have three or more pieces of luggage which they have to pull out of the train or simply because it is so crowded inside the train that alighting passengers cannot flow out freely. So far, there has been a boarding alighting function. Now, an alighting delay function adds to this with the latter matching the handling of the former closely.

3.4 Passenger Exchange Record [under development]

[This feature is still under construction and will be available in a service pack.]

This is a new raw data evaluation which produces a CSV file which contains one line of data for each alighting or boarding pedestrian, including data like the simulation time, the vehicle number, the door used and other pedestrian or PT vehicle attributes selected by the user.

3.5 Conditions for the Execution of Pedestrian Routing Decisions

Pedestrian route decisions (static as well as partial) have a new attribute "Filter" which is a formula. The decision is only active, if Filter is empty or evaluates to a value different from zero. Previously, this functionality was indirectly available for Route Decisions of the Formula type where the Route Decision was ignored, when the formula evaluated a zero for all Routes. However, Dynamic Partial Routes (relating to travel time, queue length, density or number of pedestrians) could not be combined with this. With this new feature, it is possible to define conditions when Dynamic Partial Routes are executed and when they get ignored. For formula type Static or Partial Routes, the new feature can make modelling easier and clearer.

4 Signal Control

4.1 Improved Default List Layout and Renaming

The selection of the default attributes in the list layout for signal controllers has been improved. Especially for the signal controller type **Fixed Time (Simple)**, a comprehensive data provision is now possible without having to adjust the attribute selection beforehand.

In addition, the following signal controller types have been renamed:

- **LISA+ OMTC** is now called **LISA OMTC**
- **Siemens VA** is now called **Yunex VA**
- **Level crossing** is now called **check-in/check-out** because it better represents the more open use case.

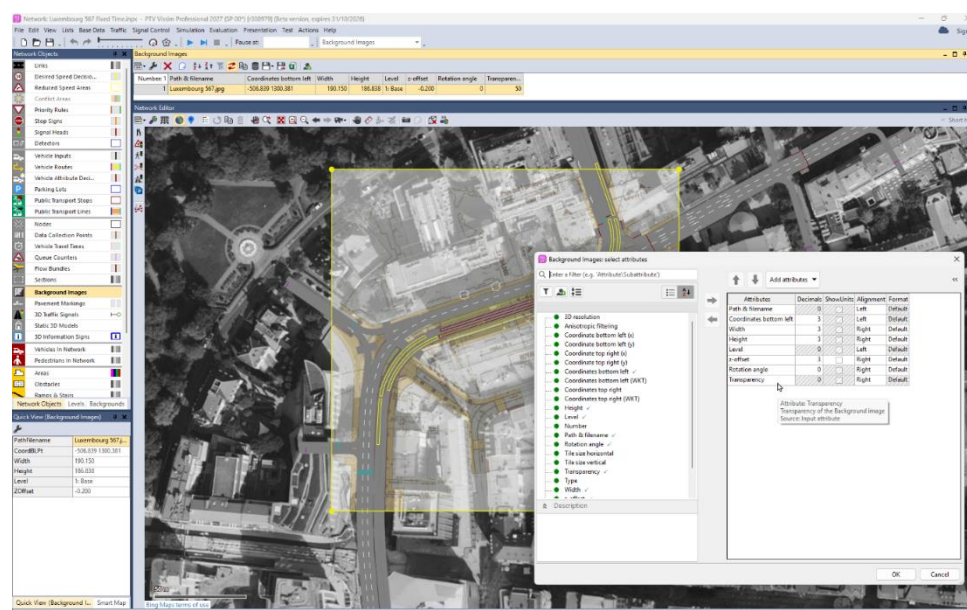
4.2 RBC – extended detector record TSP [2026 SP 05]

When transit signal priority is active, signal controllers of the type Ring Barrier Controller can now emit additional information in the detector record. The categories TSP SG, TSP BACK IN SYNC, TSP REQUEST COUNT, TSP ADJUSTMENT COUNT and TSP ADJUSTMENT have been added.

5 Usability

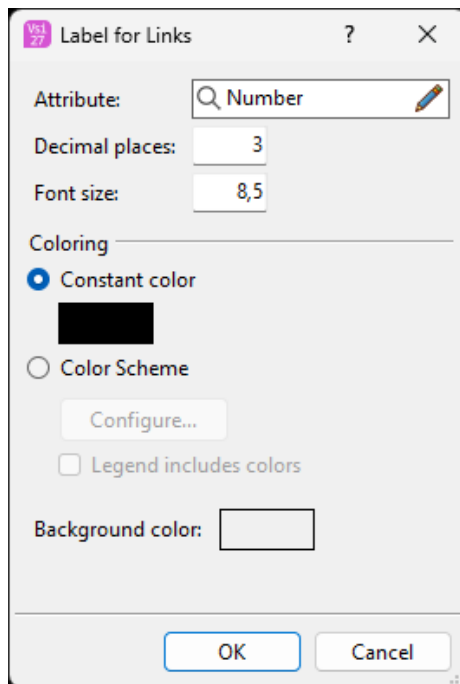
5.1 Transparency for Background Images

Background Images can now be displayed transparently using the new **transparency** attribute. This makes it easier, for example, to position **background images** on the satellite map.



5.2 Decimal Places for Font Sizes

The **Font Size** of attributes can now be specified with decimal places, allowing for finer gradations.



6 Technical Changes

6.1 CodeMeter Runtime

The CodeMeter runtime version deployed with PTV Vissim has been updated to CodeMeter 9.10.

6.2 Python

The Python version delivered with PTV Vissim has been updated to 3.14.