

VISSIM & VISWALK 5.40

Release Notes

Last modified: 2013-12-19

http://vision-traffic.ptvgroup.com/en/support_vissim
http://vision-traffic.ptvgroup.com/en/support_viswalk

5.40-11 [44678]

2013-12-16

+ New Features and Changes

ANM Import:

- + Vissim can read *.anm files exported by Visum from version 13.00-10 or Vistro from version 2.00-05 now (which include a projection string which is ignored by Vissim 5.40). **(8255)**

✓ Fixed Bugs

Vehicle Simulation:

- ✓ A downhill gradient of a link/connector may cause a positive maximum deceleration value for vehicles travelling on it due to the influence of the gradient on deceleration capabilities. This may happen e.g. with a user-defined max. deceleration function with values close to 0 or if the option "Use gradient from z-coordinates" is active and the z-coordinates of two subsequent links are too different. These events are now logged in the *.err file. (Previously, it could cause an exception message which ended the simulation run.) **(8187)**
- ✓ Conflict Areas: If a prioritized vehicle A must wait at a red signal, the yielding vehicle B (e.g. now on a protected left turn) can now pass the conflict area even if vehicle A plans to change lanes because of an upcoming necessary lane change. Previously, vehicle B did not enter the conflict area in this situation. **(8218)**

5.40-10 [43891]

2013-10-27

✓ Fixed Bugs

3D Visualization:

- ✓ Multi-element vehicles are not bent vertically while completely on one link with changing slopes. They are displayed as if the whole link had the same slope as the link segment where the front end of the vehicle is located. **(7587)**

ANM Import:

- ✓ The import crashes when reading a crosswalk over a channelized turn without ANM lane turn (e.g. exported from Vistro).
[Now, if there is no lane turn available on a channelized turn, then no crosswalk is generated and a warning is written to the message window.] **(8095)**

COM Interface:

- ✓ A simulation run crashes with an exception message if the type of a vehicle is changed during the run to a different type so that the vehicle has now *more* 2D/3D model elements than before.
[Now, this crash is prevented by initializing all model element positions in a straight line from the front end of the vehicle backwards along the link if the number of model element changes. This means that any different previous orientation is lost in this situation, i.e. the vehicle will look as set into the network at its position (from a vehicle input or parking lot).] **(7589)**
- ✓ If the array of IDs contains certain values (e.g. 13) at certain positions, GetMultiAttValues can crash for Vehicles and Pedestrians. **(7592)**

Dialogs:

- ✓ The routes table in the routing dialog shows only 6 significant digits for link coordinates. This can cause an error message about a value exceeding the link length upon clicking OK or selecting a different routing decision or route if three decimals are rounded up to two. **(7611)**

Dynamic Assignment:

- ✓ A vehicle with a real parking lot as its destination can stop before reaching the parking space if the internal parking space decision (which is created automatically at the start of the simulation run) is on a multi-lane link with a subsequent connector connecting not from all lanes on the original path of the vehicle (which might be changed through the parking space decision). **(8054)**
- ✓ An unknown parking lot number in the path file causes an exception message (at the start of a simulation run or when the paths dialog is opened). **(7585)**

Vehicle Simulation:

- ✓ If a partial PT route is passed multiple times by a PT line, the PT vehicle of this line continues its trip after the destination section of the partial PT route always with the first loop of the original PT line link sequence, i.e. it ignores in all subsequent loops that the original link sequence continues somewhere else. **(8089)**

VISWALK:

- ✓ A simulation run stops with an exception message if a pedestrian passes the conflict marker of a priority rule at position 0.0 of a pedestrian link. **(7624)**
- ✓ If a network contains multiple partial pedestrian routing decisions with the route choice method "TravelTime", only the routing decision with the highest number works correctly. **(7612)**
- ✓ If multiple platform edges are assigned to a PT stop and if more than one of them are candidates for being used for a door of a vehicle, the farthest one is used (instead of the nearest one). (Platform edges are only considered if they intersect geometrically with the internally computed entry-/queuing areas along the PT stop.) **(7602)**
- ✓ Sporadic crashes with pedestrians and escalators in 3D. **(8045)**
- ✓ The gradient of an escalator/moving walkway is not considered for the speed of pedestrians travelling on it. **(8094)**
- ✓ The link dialog multiplies the offset value of a pedestrian link by 3.281 each time the dialog is opened or closed with OK if ft is selected as unit for short distances. **(7597)**
- ✓ The simulation crashes when a PT vehicle leaves a PT stop before all boarding pedestrians which already have left the platform edge have entered the vehicle. **(7720)**
- ✓ The simulation doesn't start if there is a cutout in a pedestrian area with a routing decision due to a ramp. The error message states that the area is partitioned even if that is not really true. **(8013)**

5.40-09 [41012]

2013-05-16

+ New Features and Changes

Parking:

- + Increased simulation speed in networks with many real parking spaces. **(7496)**

Student version:

- + VISWALK is enabled for up to 30 pedestrians at the same time in the network. **(7504)**

✓ Fixed Bugs

3D Signals:

- ✓ Option "Red & amber with colored arrow" causes black arrow on green. [Should be always green arrow on black.] **(7408)**

ANM Import:

- ✓ Adaptive import aborts with exception message if 1) after initial import segment nodes are manually converted to polygon nodes and 2) on adaptive import such nodes are not changed at all. [Nodes which are re-created on adaptive import do not have this problem.] **(7455)**
- ✓ Changing the ANM signal controller type on adaptive import can cause the program to crash later on when editing any signalization related network elements (e.g. signal heads, detectors). **(7475)**
- ✓ Detectors on crosswalks may not have negative position offset (upstream of signal head). The ANM import fails with the message "POSOFFSET: Value may not be less than 0.0.". **(7456)**

- ✔ For imported signal controllers of type "Siemens VA" a 4th fictitious *.wtt filename may get created which does not exist in the import data. **(7478)**
- ✔ If lane turn polygons are defined in the *.anm file (not after export from VISUM), the default desired speeds for reduced speed areas on left turn / right turn movements are reversed (15 km/h for left turns, 25 km/h for right turns with right-hand traffic). **(7476)**
- ✔ On adaptive import new ANM zones are not created. Thus the Vissim vehicle inputs and parking lots corresponding to the new zones are not created either. **(7412)**
- ✔ The import may abort with message "Unexpected end of node" if ANM nodes are located very close to each other and if there are ANM crosswalks defined between the nodes. The import fails to extend the nodes to include the created Vissim crosswalks links. [Now the nodes are not extended if there is not enough place.] **(7153)**

COM Interface:

- ✔ link.AttValue2 doesn't accept variables of type double as parameters but only integer variables. (Double is the default type used by Matlab.) **(7512)**

Dynamic Assignment:

- ✔ If a link starts or ends exactly on a polygon node edge the *.inp file cannot be opened and an exception message is displayed. **(7444)**
- ✔ Segment nodes which contain parts of connectors are not written correctly to the *.inp file. Each connector is included with its full length after opening the *.inp file. **(7445)**

File Handling:

- ✔ *.inp files which are bigger than 2 GB can not be opened. Oversized path files, trip chain files and animation files can have problems, too. **(7409)**

Network editor:

- ✔ If a vehicle class is deleted (e.g. by deleting its only vehicle type), all references to this vehicle class are not deleted from any decisions except desired speed decisions. This can cause a subsequent simulation run to stop with an exception message, and the *.inp file cannot be opened again after saving if there are such invalid references. **(7489)**

Priority Rules:

- ✔ VISSIM can crash with an exception message when multiple conflict markers are moved to a different link. **(7401)**

Vehicle Record and Lane Change Record filter dialog:

- ✔ Loading link numbers from a filter file doesn't work. **(7479)**

Vehicle Simulation:

- ✔ A vehicle can get outside of its link laterally if "keep lateral distance to vehicles on next lane(s)" is active but overtaking on the same lane is not active. **(7497)**

VISWALK:

- ✔ A walking behaviour placed on a ramp is applied to pedestrians on the level above the ramp when they are walking on an area above that ramp. **(7403)**
- ✔ If a PT vehicle stops very close to a platform edge and pedestrians are boarding, it might happen that this vehicle does never depart. **(7440)**
- ✔ Semantic error messages regarding a pedestrian route report the line and column number of the subsequent network object in the *.inp file instead of the line and column of the respective route. **(7511)**
- ✔ The simulation hangs when a pedestrian is sent to a narrow waiting area that has no location which is more than 0.3 meters away from all edges of the waiting area. **(7481)**

! Breaking Changes

VISWALK:

- ! Known problem in version 5.40: Multiple simulation runs with the same random seed can have different results if more than one core is used. (As the speed-up of the pedestrian simulation through multithreading is not very high, it's recommended to use only one core if reproducibility is required.) **(6693)**

+ New Features and Changes

VISWALK:

- + Example Files: A new example has been added to the setup. Bus Bunching is modelled. It also demonstrates PT partial routes and computation efficiency if separate regions (in this example: the bus stops) of the pedestrian simulation are placed on different levels. See ProgramData\PTV_Vision\VISSIM540\Examples\Training\Pedestrians.PublicTransport\Bus-Bunching.inp and ProgramData\PTV_Vision\VISSIM540\Examples\Training\Description.pdf. **(7279)**
- + Increased simulation speed of scenarios with real pedestrians boarding or alighting from PT vehicles. **(7297)**

✓ Fixed Bugs

ANM Import:

- ✓ In some cases on adaptive import created VISSIM connector links have unusual geometry which causes vehicles to pirouette when they cross. **(7299)**

Background Images:

- ✓ In rare cases, the background parameters file (*.bgr) can be written with commas as decimal separators (instead of decimal point). When a background file with such a *.bgr file is loaded, the parameters cannot be read and an error message is displayed. **(7262)**

COM Interface:

- ✓ Setting the attribute "VOLUME" of a (vehicle or pedestrian) input is ignored at the start of an input time interval of only one time step. **(7344)**

Conflict Areas:

- ✓ A crossing conflict between a connector and its origin / destination link can be unnecessarily long on a lane which is only crossed by the connector (because the link has more lanes than the connector). **(7384)**
- ✓ If one of the links is split upstream of the conflict area, the priority is swapped if that link has a lower number than the other link and the newly created link has a higher number than the other link (or vice versa). **(7311)**

Driving Simulator Interface:

- ✓ Multiple simulator vehicles don't work correctly. **(7380)**

Inputs (vehicles & pedestrians):

- ✓ "Exact" input volume can be off by one if the time interval does not start and end at a full simulation second. A vehicle/pedestrian can be placed in the network in the previous time interval already, or a vehicle/pedestrian can be skipped if the random input time is very close to the start respectively end of the time interval. **(7343)**

Read Additionally:

- ✓ Vehicle compositions are always duplicated even if "keep duplicates" is not selected. (This bug was introduced in version 5.40-07.) **(7296)**

Vehicle Simulation:

- ✓ The emergency stop distance of a connector is passed upstream along the route to links/connectors which do not have the required lane to change to. This causes vehicles on such a route to stop at the emergency stop position until they are eventually removed from the network after the full "waiting time until diffusion". [Now, emergency stop positions are automatically moved downstream to positions where the required lane change direction is still possible, i.e. at least 0.1 m downstream of a connector which does not connect to a lane that the next connector of the route starts from.] **(7278)**

View - Load Settings:

- ✓ Loading an *.ini file with a small VISSIM main window size (no network window visible, only toolbar and/or menu) causes an exception message. **(7385)**

VISWALK:

- ✔ Crash during the editing of fields in the pedestrian OD matrix. **(7276)**
- ✔ If a pedestrian route ends on an escalator / moving walkway, the simulation stops with an error message as soon as the pedestrian arrives at the end of that ramp. **(7381)**
- ✔ If the simulation is started after adding a route (without saving the *.inp file and loading it again), VISWALK can crash. **(7358)**
- ✔ Pedestrians are sometimes not inserted in the simulation, especially on small input areas or in PT vehicles (alighting passengers). This causes the message "Alighting pedestrian is not on walking ground at all (time). It gets removed." or "Pedestrian (position) is not on walking ground at all (time)." in the *.err file. **(7241)**
- ✔ Pedestrians with a route to a queueing area for a service point selection stop on a previous ramp from/to the same level without an intermediate route point. **(7260)**

5.40-07 [37804]

2012-11-26

+ New Features and Changes

Background Images:

- + More *.dwg and *.dxf files can be loaded and displayed, especially many more in the 64 bit edition which uses the same external library now. **(7221)**

VISWALK:

- + Decrease initialization time for large pedestrian networks. **(7236)**

Windows 8:

- + Setups and Updates contain dongle drivers and .NET setup for Windows 8. (Versions prior to 5.40-07 require manual setup of current Hardlock/Codemeter drivers and .NET 3.5.) **(7219)**

✔ Fixed Bugs

3D Model Selection Dialog:

- ✔ The drive field shows initially the drive of the current data directory instead of the drive of the VISISM installation where the startup directory Exe\3DModels\ is located. (This can cause the dialog to crash in rare cases if the data directory is on a mapped network drive.) **(7208)**

3D Visualization:

- ✔ Incorrect warning message about 3D model geometry upon loading an *.inp file after a previous multirun simulation.
(This has been observed only on i7-3930K and i7-3770 processors, and it could not be reproduced on i7-920 and i7-2600 processors.) **(7111)**

ANM Import:

- ✔ VISSIM crashes if the ANM data contains PT stops on links with pockets on the from node (outbound pockets on from node). **(7159)**

Detectors:

- ✔ Departure signal does not work if the dwell time is smaller than the number of seconds before departure. **(7191)**

Dialogs:

- ✔ Drop-down listboxes with many numerically sorted elements can be very slow to fill, e.g. the parking lot dialog takes a long time to open if there are a lot of vehicle compositions (thousands). **(7218)**

Dynamic Assignment:

- ✔ Create static routing uses only volumes from the path file, ignoring latent demand from matrices. [Now, each vehicle input volume for a time interval is still determined from the total of the respective parking lot path volumes of that interval, but normalized so that the total source volume of all parking lots of that zone for the interval matches the demand from the matrix file(s) for that time period.] **(7156)**

- ✔ Real Parking Spaces: When a vehicle passes a second parking space decision of the same parking lot group, it can select only a parking space assigned to this decision (one of the parking spaces which had their original parking space decisions combined at this location) even if the previously selected parking space had a higher attraction value. Additionally, the vehicle doesn't release the reservation for the previously selected parking space, so the previously selected parking space cannot be used anymore during this simulation run. The shortest path search can wrongly use paths which pass through a real parking space used for dynamic assignment (parking lot zone > 0) on a one-lane link. [Now, these problems are all fixed, and each parking lot with real parking spaces used for dynamic assignment is assigned additionally to all other parking space decisions of its parking lot group which are not farther away than the parking lot distance of the parking lot (default 50 m, if not explicitly set in the *.inp file) plus 50 m (the maximum distance for merging of two parking space decisions).] **(7222)**

Evaluations:

- ✔ Time intervals are not always initialized correctly on some computers. This can cause an interval to include data from (the) previous interval(s). (This has been observed for data collection on i7-3930K and i7-3770 processors. It could not be reproduced on i7-920 and i7-2600 processors.) **(7110)**

Macro Replay:

- ✔ Detector calls are sometimes not executed for free running controllers (without fixed cycle). **(7188)**

Nodes:

- ✔ User defined orientations is disabled if Dynamic Assignment is not included in the VISSIM license. User defined orientations can be set, however, even if Node evaluation is not checked. **(7204)**

Read Additionally:

- ✔ Vehicle classes are always duplicated even if "keep duplicates" is not selected. (This bug was introduced in version 5.40-05.) **(7198)**

Signal Control:

- ✔ Incorrect error message "The number of signal group has been changed by the GUI DLL <*.dll> to the illegal value 0." if a signal group is deleted by the GUI DLL of an external signal controller. This can happen when the data of a RBC controller which was converted from a NEMA controller which had signal group numbers outside of {1..12; 101..108} is accessed for the first time in the GUI. (This bug was introduced in version 5.40-05.) **(7165)**
- ✔ The conversion of fixed time controller data from an old *.inp file (into a *.sig file) can fail in some cases (e.g. for signal groups with a second green time) which prevents the initialization of the controller at the start of a simulation run. **(7172)**
- ✔ The dialog for Fixed Time (or VISSIG) controllers doesn't accept a decimal point in edit fields in grids. **(7186)**

Simulation Run:

- ✔ Pressing G on the keyboard causes the simulation to stop with an exception message if there are no pedestrian inputs in the network **(7107)**

VISWALK:

- ✔ Animation Replay: If a pedestrian is on a ramp with a number larger than 65535 (2 Bytes), VISSIM does not find the ramp, causing the replay to stop with an exception message. **(7184)**
- ✔ Dynamic potential does not work on the second and all subsequent (intermediate) route points. (This bug was introduced in version 5.40-05.) **(7211)**
- ✔ If a static pedestrian routing decision has only routes with relative flow 0.0 during a time interval which does not intersect with the beginning or end of the input time intervals, the simulation stops at the beginning of that time interval. **(7183)**

5.40-06 [36554]

2012-09-07

+ New Features and Changes

Command line:

- + New parameter "-notwosidedlighting" for dramatically improved 3D performance on Nvidia GeForce (not Quadro) graphics series 400 and later (Fermi or Kepler architecture). If this command line parameter is used, the image quality can be reduced if 3D models (vehicles or static models) don't have correct normal vectors. (Unfortunately, some of the default models have this problem.) **(7075)**

VISWALK:

- + Speedup of public transport vehicle stop initialization. **(7080)**

✓ Fixed Bugs

ANM Import:

- ✓ Fails to import external signal controller of types RBC, ASC3, D4 and 2033 due to an erroneous licence check for these types. **(7054)**

Dynamic Assignment:

- ✓ Expected edge travel times are calculated incorrectly in the first evaluation interval if distance or link cost affect the generalized cost of the first vehicle type. **(7051)**

Non lane-based traffic:

- ✓ The minimum look ahead distance is ignored for the check of leading vehicles on the adjacent lane(s), so "keep lateral distance to vehicle on next lane(s)" does not work beyond the number of observed vehicles defined in the driving behavior parameter set. This can cause a collision with a vehicle on an adjacent lane which is seen too late for braking. **(7071)**

VISWALK:

- ✓ Read additionally of a network with pedestrian objects can fail with an error message, or the resulting network can be inconsistent so it cannot be read in again after having been saved. **(7050)**
- ✓ The simulation of a network with ramps/stairs and with active visualization can stop with an exception message (with the _exception.err file referring to line 1154 in Pedestrians.cpp). **(7078)**
- ✓ When a pedestrian route exists for which no walkable path between the start area and the destination area can be found, VISSIM crashes at simulation start. **(7079)**

5.40-05 [36244]

2012-08-27

+ New Features and Changes

ANM Import:

- + Import of additional signal controller types supported: ASC3, D4, 2033. **(7006)**
- + New optional attribute "LENGTH" for detectors. If the given length can not be used (link is too short), then the length is automatically shortened. **(6997)**
- + New optional attribute "OPPOSITELINK" for links for definition of the opposite link (through movement). This affects the generation of conflict areas for pedestrian crosswalks (only for turning movements) and the automatic generation of reduced speed areas. **(6987)**
- + New optional attribute "REDUCEDSPEED" for turns and lane turns. A speed > 0 is used for generating a reduced speed area. By defining a negative value no reduced speed area is generated. If the attribute is not set or has the value 0, then the reduced speed areas are automatically generated. **(6988)**

Network Window:

- + Custom logos can be shown in all three free corners (not upper right), and optionally with a certain offset from the frame. CUSTOM_BL.BMP is shown in the bottom left corner, CUSTOM_BR.BMP in the bottom right corner (where CUSTOM.BMP is still shown as well), CUSTOM_UL.BMP in the upper left corner. CUSTOM_BL_OFFSET.BMP is shown in the bottom left corner, with some distance to the window frame: If the width of the logo is more than 1.5 times the height, the distance from the bottom and the distance from the left are both equivalent to the height of the logo. If the width of the logo is less than 1.5 times the height, the distance from the bottom is 0.5 times the height, and the distance from the left is 0.75 times the height of the logo. The same offsets are applied for CUSTOM_BR_OFFSET.BMP and CUSTOM_UL_OFFSET.BMP. (The slight displacement of the logos in 2D has been fixed, too.) **(6994)**

Signal Control:

- ➕ New attribute "rate of compliance" for signal heads for vehicles (not for pedestrians). Default (and maximum) value is 1.0 (100%), minimum value 0.0 (0%). Each vehicle has a personal random value, equally distributed between 0.0 and 1.0. If this random value is higher than the compliance rate value of the signal head, the vehicle ignores that signal head. The attribute can be entered only with a text editor in the *.inp file, in the block SIGNAL_HEAD, directly before POSITION, with the keyword COMPLIANCE and a floating point value from [0.0 .. 1.0]. **(7021)**

VISWALK:

- ➕ Speed up of the initialization of large pedestrian networks at the start of a simulation run. **(6947)**

✔ Fixed Bugs

3D Visualization:

- ✔ Display of pavement markers in 3D is incorrect on links with different lane widths. **(7016)**

Analyzer:

- ✔ Report generation aborts with the message "An error has occurred generating one of the reports." if multiple time periods are selected in the settings for "Movement Group Delay" or if a random seed filter is activated and only one simulation run exists. **(6996)**

COM Interface:

- ✔ If the volume of an "exact" input (for vehicles & pedestrians) is set through COM, this input doesn't set a vehicle/pedestrian into the network in the first simulation time step after the volume has been set. This can cause the input to have a lower volume than specified. **(7008)**
- ✔ Removing an assigned time distribution from a stop sign (by setting the distribution number to zero) causes a COM exception. **(7028)**
- ✔ The function AddPathAsNodeSequence() causes a COM exception if called from a VBA script. **(7027)**

Command Line:

- ✔ An *.inp filename listed in the command line of VISSIM prevents subsequent command line parameters from being evaluated correctly: The command line arguments -automation, -embedding, -l and -o don't work, and the splash screen is shown with -regserver and -unregserver. (The -s parameter does work correctly.) **(7022)**

Driving Behavior Parameters:

- ✔ For cooperative lane changing, vehicles ignore the link attributes "lane closure" and "no lane change". **(7023)**

Synchro Import:

- ✔ The import can fail if a node description contains a comma (for example in a date). **(6707)**

VISWALK:

- ✔ A service point reservation by a partial route is not canceled if the pedestrian skips that service point because of a subsequent partial routing decision. This causes that service point to remain unused for the remainder of the simulation run if the maximum queue length is 1. **(6652)**
- ✔ Combinations of partial routes together with ramps can lead to a crash during the simulation. **(6945)**
- ✔ If a static routing decision is located on the destination area of one of its routes, pedestrians using that route ignore this routing decision when they arrive at this destination area, instead of selecting again one of the routes. **(6426)**
- ✔ If a waiting area is only an intermediate destination of a (static or partial) route, it affects pedestrians on that route, i.e. the pedestrians wait and board PT vehicles. [Now, the waiting area must be the destination area of the static route (not only a partial route) of the pedestrian to be used.] **(6630)**
- ✔ If aggregation interval of pedestrian queue evaluation and simulation time step are equal (normally only when both equal 1) there's a crash at simulation end. **(7005)**
- ✔ PT Stop Data dialog: The checkbox "Late boarding possible" is not visible if "Larger scale" is selected in the Windows display options for DPI scaling (e.g. "120 DPI" on Vista). **(6995)**
- ✔ Skipping of intermediate routing points or route end points because of partial routes can cause incorrect behavior at service point selection and incomplete travel time measurement results. **(6961)**

+ New Features and Changes

3D Signals:

- + One-bulb triangle ("Go"). **(6653)**

Car2X Interface:

- + Vehicle type and desired lane index (9999 = no desired lane) can be set through C2X. **(6656)**

Lane Change Behavior:

- + The desired lane of a vehicle (which can be set through a direction decision or through COM or Car2X) overrides route and lane closure. If the desired lane is not "no desired lane" (9999), the vehicle uses the parameters for a necessary lane change (in 250.0 m distance) to decide if it starts a lane change in the desired direction (desired lane index greater or smaller than the current lane index, rightmost lane = 1) or not. **(6659)**

Managed Lanes:

- + If a vehicle decides to use the managed lanes route of a managed lanes routing decision, it ignores all downstream managed lanes routing decisions within 10 meters on the same link. This allows a second modeling method in addition to what the VISSIM manual recommends (only one facility per managed lanes entry/exit, with one decision each on the general purpose lane and on the managed lane and with the routes extending only to the general purpose lane downstream of the next exit). The new method uses multiple managed lanes facilities with decisions at (almost) the same location for different combinations of managed lanes sections (all sections, all sections but one, all sections but two...). Now, the managed lanes evaluation posts correct volumes and revenue for each of these managed lane routes because each vehicle is counted only for the managed lanes route that it actually uses. (Before this change, only the routes of the last decision were actually used but each vehicle was counted for the revenue of all upstream decisions where the decision model condition was met, so multiple decisions in short sequence were useless.) **(6967)**

Simulation Run:

- + Vehicles, priority rules, conflict areas and queue counters (including those used by the node evaluation) do not look back through single-lane links with real parking spaces on them anymore. This makes the simulation much faster if there are many single parking spaces in the network with priority rules, conflict areas, queue counters or evaluation nodes downstream which would have to look upstream through multiple possible link sequences (through any combination of these parking space links). **(6637)**

VISWALK:

- + COM Interface: New method RemoveBeelinePedPedestrian(long PedID) to remove a "Bee Line Pedestrian". **(6695)**

✓ Fixed Bugs

3D Visualization:

- ✓ *.v3d models of V3DM file version 1.43 or later are not colored correctly in the 3D model dialog and during the simulation. Additionally, parts of those models are not displayed. **(6715)**
- ✓ Doors of PT vehicles are not animated at a PT stop on a partial PT route if the stop is not part of the original line route. **(6959)**

ANM Import:

- ✓ Adaptive Import can crash with message "unexpected end of node x", with a node number which doesn't exist in the VISSIM network nor in the ANM network. **(6953)**
- ✓ ANM signal controller program number for fixed time controllers is not imported. **(6706)**
- ✓ Conflict areas with pedestrian crosswalks upstream of the intersection and downstream with through movements have the wrong precedence (vehicles wait). **(6983)**
- ✓ If a simulation run is started right after the import (without saving and reading the *.inp file), then the created conflict areas do not work correctly. **(6682)**
- ✓ If the ANM network contains crosswalks over one-way links, then in some cases the import may abort with the error message "Maximum network size exceeded". **(6626)**

- ✔ No conflict areas are created for branching in nodes with control type TwoWayYield. **(6683)**

Background Images:

- ✔ Some *.dwg files cannot be loaded. [In the 32 bit edition, a new version of an external library is used which rejects fewer files.] **(6419)**

COM Interface:

- ✔ The function AddPathAsNodeSequence() does not interpret a node sequence correctly if called from a VBA script. **(6641)**

Dynamic Assignment:

- ✔ A path can pass through an edge with a zone connector or abstract parking lot. [Now, such an edge can only be at the start/end of a path, but paths can still pass through edges with real parking lots.] **(6992)**
- ✔ If a parking lot that belongs to a zone is removed after a dynamic assignment has been performed, VISSIM crashes if another dynamic assignment run is to be performed unless the *.weg file is removed explicitly. **(6210)**

Evaluations:

- ✔ Database output in Russian aborts with error message "Error creating table _____ ...". **(6982)**

Non lane-based traffic:

- ✔ Under certain circumstances, vehicles can pass through other vehicles after having passed the rear end. **(6645)**

Signal Control:

- ✔ The program number is not saved in the *.inp file for signal controller type "External". Instead, the program number is always set to 1 after reading an *.inp file. **(5916)**

V3DM:

- ✔ In orthogonal projection mode the visibility of elements is not calculated correctly, e.g. elements in front that should be visible might be hidden by other elements located behind. **(6985)**

VISWALK:

- ✔ Area evaluation shows wrong X and Y coordinates of pedestrians. **(6633)**
- ✔ CAD Import: Imported areas appear "shifted" after subsequent imports. **(6718)**
- ✔ COM interface: "Bee Line Pedestrians" (pedestrians which do not head for a destination area, but receive their preferred walking direction through the COM interface methods CreateBeelinePedPedestrian() and SetBeelineAim()) do not always follow this direction but sometimes head for the coordinates (0.0/0.0). **(6579)**
- ✔ If the height (3D z-coordinate) of a pedestrian link, determined as total of level height and offset, is negative, the link dialog displays first a warning and then an exception message upon OK and sets the height to zero, adapting the offset accordingly. **(6657)**
- ✔ In some cases, the pedestrian simulation is not symmetrical, i.e. rotating the network could lead to different results. **(6510)**
- ✔ Partial routes for service point selection affect pedestrians without intermediate destination on the decision's area. **(6651)**
- ✔ Pedestrians ignore partial routing decisions on the destination area of their current partial route. **(6671)**
- ✔ Pedestrians on a level are influenced by pedestrians on an escalator above or below them. (This problem does not exist with ramps and stairs.) **(6946)**
- ✔ Pedestrians who were pushed onto the start or the end of a ramp or who stand on the horizontal runout of a moving walkway are sometimes visualized at the wrong height. **(6648)**
- ✔ The COM interface provides wrong X and Y world coordinates of pedestrians. **(6632)**
- ✔ The pedestrian model crashes if the pedestrian record and/or jam detection is active. **(6951)**
- ✔ The unnecessary warning message "The space directly next to ramp x on level y is partitioned (e.g. by obstacles). This may lead to unexpected pedestrian behavior." can appear in the *.err file only because the ends of two ramps are close to each other. **(6672)**

+ New Features and Changes

Managed Lanes:

- + New attribute "intercept" (default value zero) in the decision model which is added to the utility value for the managed lane in the logit formula exponent:

$$u'\Delta'; Utility = CostCoefficient * u'\Delta'; Cost + TimeCoefficient * u'\Delta'; Time + Intercept$$
 (6539)

Non lane-based traffic:

- + If a vehicle must decide whether it overtakes another vehicle on the same lane it considers its maximum deceleration now. If it cannot brake in time upstream of the other vehicle it will try to overtake even if it may not overtake it normally because of the driving behavior parameters (consider next turning direction, passing speed). Illegal passing is preferred to a crash. **(6582)**

VISWALK:

- + *.ani file recording: The areas which indicate where traffic has to be written to an *.ani file are now also respected for the pedestrian simulation. **(6599)**
- + New attribute "PT waiting behavior" for waiting areas for PT stops. The default value is "wait if held up" which means that pedestrians can start to wait for the next PT vehicle even outside the waiting area, provided they are (almost) standing and they are close to the waiting area (less than 5 m walking distance away). This is the same behavior as in VISSIM 5.40-02, and it can cause artificial crowds of pedestrians waiting outside of the waiting area only because a narrow access to the waiting area had been blocked temporarily. Now, the attribute can be set to the value "wait at fixed location" instead, switching off the possibility to wait outside the waiting area. With this value, each pedestrian attempts continuously to reach his random waiting position inside the waiting area before he starts to wait for the next PT vehicle. (If the PT vehicle is already in the stop, the pedestrians can still approach the vehicle as soon as they have reached the waiting area.) This new option can be set only in the *.inp file so far, by adding the keywords "PTWAITINGBEHAVIOR WAITATFIXEDLOCATION" after the PT stop numbers listed after "WAITINGAREA STOPS". **(6583)**

✓ Fixed Bugs

3D Models:

- ✓ The selection of a static 3D model is active in 2D mode even if 2D footprints are disabled (and thus the selection is not visible). Hence a 3D model may be deleted accidentally when pressing "DEL". **(6600)**

3D Visualization:

- ✓ Lane marking for "no lane change" (continuous stripe) is broken on non-horizontal links (with spline points with different height): The stripe is drawn in sections, each one of which has the start on the link (correctly) but the end at the height (z-coordinate) of the start point of the link. **(6607)**

ANM Import:

- ✓ Link polygons of VISSIM connector links can be "corrupt", resulting in conflict areas with unrealistically low throughput. **(6585)**

COM:

- ✓ Following elements cannot be accessed by index:
 - Area behavior types
 - Pedestrians
 - Pedestrian areas
 - Pedestrian classes
 - Pedestrian routes
 - Pedestrian travel times
 - Pedestrian types
 - Walking behavior parameter sets **(6644)**

Driving Simulator Interface:

- ✓ Reverse driving of the simulator vehicle can cause a crash because VISSIM cannot handle negative speed. **(6578)**

Non lane-based traffic:

- ✔ A simulation run can stop with the error message "no free memory" if overtaking on the same lane is allowed on a very wide lane (more than 100 times the width of a vehicle). **(6610)**

Parking Lot Routes:

- ✔ The simulation run stops with an exception message if a PT vehicle on a parking lot route sees its next PT stop (of its PT line or current partial PT route) downstream. (This bug was introduced in version 5.40-02.) **(6568)**

Priority Rules:

- ✔ If a new priority rule is created, changing the affected vehicle classes for the red and/or the green section has no effect. (After another double-click on the priority rule, the vehicle classes can be edited okay.) (This bug has been introduced in version 5.40-01.) **(6598)**

Reduced Speed Areas:

- ✔ If a vehicle sees a reduced speed area on its original route before it starts a parking lot route, the vehicle behaves as if this reduced speed area was on the parking lot route. The vehicle brakes to the reduced speed at the originally determined distance and keeps the reduced speed for the length of the reduced speed area. Additionally, all reduced speed areas in between on the parking lot route are ignored. **(6561)**

Signal Control:

- ✔ If the controller DLL vap216.dll writes a warning message into the file vap216dll.err for at least one VAP SC during the simulation, VISSIM displays for each VAP SC a message that this file was written. [Now, this message appears only once and doesn't refer a specific controller.] **(6617)**
- ✔ If the simulation resolution is higher than the signal controller frequency (i.e. if there are multiple simulation time steps between two calls of the controller) and if multiple vehicle rear ends pass one detector in different simulation time steps but in the same controller time step, the rear end time information passed to the controller includes only the data from the last simulation time step when a rear end passed the detector. The simulation time for the previous rear ends is passed as -100 (hundredths of a controller time step). This can cause problems in a controller that uses exact vehicle rear end time information (e.g. VS-PLUS). **(6586)**
- ✔ Macro Recording/Replay: Doesn't work correctly if the simulation parameter "Start Time" is not a multiple of the controller's cycle time. This can cause a wrong cycle number to be recorded for detector events in the macro file (*.m_i) which causes a different detector event series during replay. **(6611)**
- ✔ Test Mode: Switching from continuous detection (magenta) to single detection (blue) or repeating detection (cyan) causes only one rear end to be passed to the controller (instead of two). **(6587)**

Split link:

- ✔ Conflict areas on the split link are not adjusted correctly (some attributes are wrongly reset). **(6591)**

VISWALK:

- ✔ Calculation of Dynamic Potential might sometimes freeze. **(6563)**
- ✔ If an *.ani file contains pedestrians boarding (or alighting from) a public transport vehicle, there are wrong warnings written into the *.err file at the end of the *.ani file replay. **(6538)**
- ✔ If both pedestrian area evaluation and area-based LOS display are activated, then pedestrians on a measurement area are (wrongly) considered in the LOS display for the area with the same ID as the measurement area. **(6604)**
- ✔ Vehicle Record / Vehicle Information Window: The value of "PT: Waiting Passengers" is usually incorrect with real pedestrians because pedestrians arriving at their random destination position inside the waiting area are counted twice. **(6573)**

5.40-02 [32464]

2012-01-31

+ New Features and Changes

API:

- + Pedestrian Model DLL Interface: Option to have the DLL create pedestrians. **(6466)**

Managed Lanes:

- + If there are multiple managed lane routing decisions on a managed lane route (of a previously passed decision), each one of these decisions can affect vehicles on that managed lane route, provided the destination of the decision is on the previous static (partial) route of the vehicle. (Up to VISSIM 5.40-01, only the last managed lanes decision on a managed lanes route could affect vehicles.) When the current managed lanes route of a vehicle is replaced by a new route at such a managed lanes decision, it's now possible that the travel times for previously started managed lanes routes are still counted until the vehicle passes the destination section of the respective route. This is under the condition that the vehicle maintains its decision for/against the managed lane and that either the old destination is on the new route or the new destination is on the old route. If this is not the case, the total travel time for the old route is estimated proportionally if the vehicle has passed at least 3/4 of the length of the old route. (Up to VISSIM 5.40-01 the travel time for the old route was estimated even if the vehicle would have passed the old destination later.) **(6470)**

Partial PT Routes:

- + This new type of routing decisions works like partial routes but for PT vehicles (having entered the network on a PT line).
A filter for affected PT lines can be set. PT vehicles are affected if either
 - a) they are still on their original line route or on a partial PT route and the destination section of the routes of the current partial PT routing decision is located on that previous route or
 - b) they have already completed their original line route and are not on a partial PT route (in which case the location of the destination section does not need to meet any condition).Partial PT routes can have line stops like PT lines with all dwell time attributes available. As long as a PT vehicle has not finished its original line route, the departure time offset works like the offset in line stops on the original line route. As soon as a PT vehicle has passed the destination of its original line route, the departure time offset of a line stop on a partial PT route is treated as relative to the simulation time when the vehicle passed the respective partial PT routing decision.
From this VISSIM version on, static routing decisions and partial routing decisions don't have any effect anymore on PT vehicles, not even after the end of the line route. **(4925)**

VISWALK:

- + At simulation start, the speed of all escalators and moving walkways is checked. A warning message is displayed if a speed is so high that pedestrians could skip the internal overlap areas at the end of a ramp. **(6463)**
- + At simulation start, the walkable width of all escalators and moving walkways is checked. A warning message is displayed if the walkable width is outside of the range from 0.6m to 1.2m. **(6446)**
- + Example Files: The setup now includes not only the test cases from RiMEA (Richtlinien für Mikroskopische Entfluchtungsanalyse, Guidelines for Microscopic Evacuation Analysis, www.rimea.de) but also a documentation of the execution and measurements of these test cases. So far it is only available in German language, a translation will follow in a future service pack. **(6534)**
- + For escalators/moving walkways the usable width can be defined directly (instead of the socket width). The socket width is calculated as $(\text{total width} - \text{usable width}) / 2$. **(6461)**
- + Pedestrian area evaluations can now detect and record pedestrians' x and y positions. **(6505)**
- + The dynamic potential for a certain goal is only calculated as long as there are pedestrians using this potential. **(6498)**

Fixed Bugs

ANM Import:

- ✓ Adaptive Import: If there are at least two parallel edges between a new generated node and an unchanged node, sometimes the wrong pair of links (belonging to different edges and having different numbers of lanes or not fitting lane closures) is connected during adaptive import. **(6397)**
- ✓ Adaptive Import: Signal heads with duplicated signal head numbers may be created. **(6455)**
- ✓ Geometry warnings at a node with a turning movement starting inside the node can cause VISSIM to crash. **(6524)**
- ✓ The import may abort with error "Unexpected begin of node x" if public transport stops are imported as bay and the link coordinate is very small (smaller than about 0.1 meters). **(6471)**
- ✓ The z-coordinate of a crosswalk is obtained from the z-coordinate of the node instead of using the interpolated z-coordinate from where the crosswalk intersects with the road. **(6330)**
- ✓ The z-coordinates of imported zone connectors are wrong. **(6274)**

COM Interface:

- ✔ Tool bars hidden by the COM function `set_AttValue("TOOLBAR", 0)` become visible after selecting Zoom or Pan from the navigation tool bar. **(6495)**

Driving Behavior Parameters:

- ✔ If smooth closeup is activated a vehicle approaching a standing obstacle downstream of another moving vehicle can trigger a very long calculation, causing the simulation to stall for some time. **(6511)**

Dynamic Assignment:

- ✔ The creation of vehicle type sets (vehicle types which share cost coefficients and connector closures) takes a very long time if there are many connector closures. During the ANM import this can cause the impression that VISSIM hangs. **(6500)**

Pavement Marker Dialog:

- ✔ Placing the marker by defining the distance before a stop line does not work. **(6512)**

PT Lines:

- ✔ If two lines have the same desired speed distribution the first vehicle of one line has the same desired speed as the first vehicle of the other line. Ditto for the two second vehicles, the two third vehicles and so on. **(6473)**

Read Additionally:

- ✔ Additional display types are only read if they differ from the existing ones by color. Different textures and other display type attributes are (wrongly) ignored. **(6460)**
- ✔ Reading of stop signs with vehicle class data (time distribution) aborts with error "Unknown vehicle class". **(6533)**

Routes Dialog :

- ✔ The dialog aborts with an exception message if the network contains link names containing the character "|". **(6443)**

VDiag:

- ✔ The message saying that the hotline package was created successfully can appear even if no package was created at all. **(6257)**

VISWALK:

- ✔ Additional read of networks including escalators and/or moving walkways may abort with error "Display type doesn't exist.". Afterwards the current network will contain some data from the network to read additionally. **(6459)**
- ✔ Deleting a display type which is used by a normal area or a ramp or a stairway causes an error "VISWALK has encountered a severe problem...". The network data may be corrupted afterwards. **(6526)**
- ✔ If the destination of a pedestrian route with dynamic potential lies very close to the borders of an area, the simulation might be slowed down by unnecessary calculations. **(6508)**
- ✔ If the internal obstacles at the start or end of a ramps divide an area with routing decisions on it, the simulation does not start and an unclear error message is displayed. **(6202)**
- ✔ Memory leak with pedestrians and public transport. It made the simulation not reproducible and PT vehicles had wrong occupancies. **(6472)**
- ✔ Ramp Dialog: The Going of a stair/walkway/escalator can be set larger than its length in the ramp dialog. **(6404)**
- ✔ Ramp properties dialog may crash or show wrong error messages if more than one ramp is selected. **(6475)**
- ✔ The area evaluation lists only absolute values of speed x and y. [Now, the sign tells the direction.] **(6468)**
- ✔ The detection of free space on the first step of escalators/moving walkways doesn't work correctly. [Now, pedestrians stand on the escalators more densely and the flow rate is increased]. **(6447)**
- ✔ The program may crash if a pedestrian measurement area is created immediately after starting the program, without loading an inputfile. **(6449)**

+ New Features and Changes

C2X Interface:

- + Detectors, SignalGroups and SignalControllers are accessible via the C2X interface. The available attributes of these objects can be found in the file [VISSIM folder]/API/C2X/c2x.html. **(6423)**

COM Interface:

- + The new function Graphics.SetActiveKeyFrame() can be used to set the 3D camera to the view of a saved keyframe. **(2903)**

Display Types:

- + Additional default display types "Rail (stones)", "Rail (road)", "Pedestrian area gray", "Obstacle", "Escalator steps", "Escalator landing", "Escalator handrail", "Escalator balustrade" and "Escalator socket".
If you wish to add these display types to an existing network, save an empty network as *.inp file and read this file additionally to the existing network with only "Display types" selected. **(6414)**

VISWALK:

- + Escalators/moving walkways:
The percentage of pedestrians walking on the escalator/moving walkway can be defined along with a filter of pedestrian classes. For the remaining pedestrians the standing location can be defined as either only left, only right or random.
User-definable display types can be selected for balustrade, handrail and socket. **(6331)**
- + The pedestrian area evaluation has new observables for pedestrians' speed in x-/y-direction. **(6328)**
- + The pedestrian area evaluation has new observables for pedestrians' time entering and time leaving the evaluation area. **(6333)**

✓ Fixed Bugs

ANM Import:

- ✓ Adaptive import may abort with an exception message if the the imported *.anm file contains stop signs. **(6381)**

COM Interface:

- ✓ Iterating through the reduced speed areas via COM causes a crash. **(6415)**
- ✓ The attribute "TABLENAME" of the ILinkEvaluation COM Interface returns the configuration file name. **(6430)**

Network Editor:

- ✓ Selecting a segment node after running "Check nodes/edges" can cause several exception messages (and VISSIM must be closed via the Task Manager) in rare cases. **(6418)**

VISWALK:

- ✓ A simulation run can abort if there is a dynamic partial routing decision of type service point selection affecting a route between two different levels. This happens along the way of a static route of a pedestrian to the area containing the partial routing decision if the area of the static route which directly precedes the area containing the dynamic partial routing decision is on a different level. **(6170)**
- ✓ Defining dwell time distributions is not possible with a VISWALK licence (including only pedestrian simulation but not vehicle simulation). The menu item "Base Data - Distributions - Dwell Time..." is always disabled in this case. **(6429)**
- ✓ Escalators/moving walkways: The speed in the dialog on the tab page "Movement" is wrongly handled as km/h (or mph). [This speed is always in [m/s] and should never be converted.] **(6435)**
- ✓ If the conflict marker of a priority rule is located on a pedestrian link, the flag "all pedestrian types" is not read correctly from the *.inp file. This can cause the OK button in the priority rule dialog to be disabled erroneously. **(6433)**
- ✓ Pedestrian Compositions: VISSIM might crash (in the pedestrian composition dialog or upon file opening) if a pedestrian composition contains multiple entries with a ratio of 0. **(6442)**

- ✔ Public Transport: In rare cases an alighting pedestrian does not leave the PT vehicle at all and thus prevents the PT vehicle from departing. **(6363)**
- ✔ Public Transport: The simulation aborts with an exception error if a pedestrian arrives on a PT waiting area under the following circumstances:
He has used a partial route which ends there together with his static route or, sometimes, if "alighting is possible" but "boarding is not possible" in the PT line-specific stop data to which this waiting area belongs. **(5952)**
- ✔ Tab key / "Next" button does not work for links in the pedestrian mode. **(6425)**
- ✔ The thickness of moving walkways and escalators is not displayed in 3D mode. **(6402)**
- ✔ Undo does not work for changing the geometry of ramps. **(6411)**
- ✔ When using escalators together with partial pedestrian routes, the results of the simulation might not be reproducible. **(6417)**

5.40-00 [30899]

2011-10-13

+ New Features and Changes

Analyzer:

- + Significant speed-up of the generation of queue lengths reports. **(6255)**

ANM Import:

- + Adaptive import: Manually created detectors in a node are recovered if the node is recreated (because of a change in the ANM data). **(6223)**
- + Includes optional PT telegram attributes of PT lines. **(6311)**

AVI Recording:

- + Creation of an *.avi video file is possible from animation file (*.ani) replay (in 3D only) but only without keyframes. **(225)**

Driving Behavior Parameters:

- + Advanced merging: better tactical look ahead by merging vehicles and by cooperative trailing vehicles on the target lane. This allows more vehicles to change lanes earlier and thus increases the capacity and reduces the probability of standing vehicles waiting for a lane change. **(6137)**
- + Cooperative lane change: If this is active, a vehicle A who sees that the leading vehicle B on the adjacent lane wants to change to the lane of the vehicle A tries to change lanes itself to the other side in order to make room. Vehicle A behaves as if it had to change lanes for a connector far in the distance, accepting only the base values ("Accepted deceleration") for its own deceleration and for the trailing vehicle on the new lane. Vehicle A doesn't change cooperatively to a lane which is less suited for its own route, and it doesn't change lanes cooperatively if vehicle B is more than 3 m/s faster or if the collision time is more than 10 seconds with the speed of vehicle A increased by 3 m/s. These two parameters (maximum speed difference and maximum collision time) can be changed, too. **(5604)**
- + Fixed standstill distance upstream of static obstacle: If this option is checked, the vehicles using this parameter set use the given value as constant standstill distance upstream of all static obstacles except parking space end positions (i.e. signal heads, stop signs, pt stops, priority rules, conflict areas) instead of the normal distributed value [0.5; 0.15]. (This is required for PT vehicles at PT stops with platform screen doors or waiting queues at fixed positions on the platform.) **(6240)**
- + Lateral behavior (on the same lane): 3 new parameters:
Collision time gain: Minimum advantage in expected collision time with desired speed which is required for a lateral change to a different lateral gap downstream.
Minimum longitudinal speed: Minimum driving speed required for a lateral movement. Vehicles don't move laterally if they are slower than this value.
Time between direction changes: Minimum time between the start of a lateral movement to the left and the next start of a lateral movement to the right (or vice versa). **(6382)**
- + Smooth closeup: provides a smoother deceleration process up to a standing obstacle, avoiding unrealistic acceleration after the leading vehicle has (almost) stopped. **(6174)**

Dynamic Assignment:

- + Parking Lot selection: Warning message if percentiles become 0 because of too large negative utility values. **(6230)**

Evaluations:

- + Vehicle Record and Lane Change Record files: Optional AND-filter for link number(s). If the default entry "All links" is not selected, only vehicles on the selected links are listed in the respective evaluation file. **(6384)**

Interfaces:

- + New DLL interface for external Driving Simulators - see separate documentation (on request). **(5829)**

License Handling:

- + The number of simultaneous instances of VISSIM on one computer can be limited by the license. The default maximum for existing licenses is 4. **(6291)**

Parking Lots:

- + A real parking lot (for on-street / curb-side parking) can have an optional blocking time distribution. The blocking time is the time between the first standstill of the parking vehicle at his parking space (the rear part of the vehicle blocks traffic on the lane adjacent to the parking space) until the final standstill (the vehicle is parallel to the link). (If the length of the parking lot is exactly the length of one parking space there is no snap into the parking space and the blocking time is ignored.) The blocking time distribution can be selected on the tab page "Parking Spaces" in the parking lot dialog. Selecting "0: None" disables the blocking time. **(6387)**

Signal Control:

- + New controller types "McCain 2033" and "Fourth Dimension D4". **(6388)**
- + The RBC GUI now supports up to 64 detectors per intersection. **(6303)**

Simulation Parameters:

- + New option "Retrospective synchronization". If this option is active VISSIM doesn't wait anymore at the end of each time step until the real time allocated for that single time step has been spent (defined as time step length divided by the simulation speed). Instead, VISSIM waits until the correct total amount of real time has been spent for all time steps since the last start of the continuous simulation. This means that VISSIM tries to catch up after slower time steps (e.g. because of signal control calculation or other external effects) as soon as possible. (This is required for synchronization with external controller hardware-in-the-loop.) Real time lost when a continuous simulation is paused due to an open dialog is considered as delay, too, so the simulation will continue after this with maximum speed until the simulation time divided by the simulation speed equals the total real time spent again. If the simulation speed is reduced during a continuous simulation run with active retrospective synchronization, the simulation waits until the total real time since the start of the continuous simulation equals the current simulation time divided by the simulation speed before the next time step is executed. **(6385)**
- + New option "Use gradient from z coordinates": If this option is active, the gradient used during the simulation is dynamically computed using the z coordinates of the current link segment of the front edge of a vehicle, ignoring the static gradient of the link. **(6273)**

Unit Selection Dialog:

- + (View / Options / Language & Units) Buttons "All metric" and "All imperial". **(6280)**

VISWALK:

- + CAD Import (*.dwg files) for areas and obstacles (see manual). **(6231)**
- + Escalators and moving walkways (see manual). **(4003)**
- + New option for LOS display: A pedestrian can be "spread" over multiple cells (useful if the cells are smaller than a pedestrian). The radius of this approximated circle can be 1.5 cells. **(6386)**
- + O-D matrix editor for pedestrian inputs and route volumes (see manual). **(6266)**
- + Origin-destination evaluation for pedestrian travel times, delays and counts (see manual). **(6281)**

- ⊕ The module "Pedestrian Simulation" is now available as a standalone license (without vehicular traffic) under the name VISWALK. With such a license the program shows "VISWALK" instead of "VISSIM", has a different icon and splash screen and the GUI is reduced to the network objects which are required for pedestrian simulation. Objects used only by vehicular simulation are not available. VISSIM networks with vehicular links can be opened with VISWALK but all vehicle inputs and parking lots are disabled, so there is no vehicular traffic. **(6264)**