

# VISUM Release Notes

**Version 11.5**

**Version 11.52-11**

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Stumpfstr. 1  
D-76131 Karlsruhe  
Phone: +49 721 9651-313  
Fax +49 721 9651-299  
Hotline: [www.ptv-vision.com/hotline\\_visum](http://www.ptv-vision.com/hotline_visum)

11.52-11	Corrections, Bug Fixes and New Features (ID)	2011-06-06
<b>Data Model</b>		
▶ <i>EVA demand models</i> : The program will no longer crash if structural properties are deleted. (1804)		
<b>Development Components</b>		
▶ <i>SATURN import</i> : The identification of the major flows during the import procedure has been improved. (10012)		
<b>Dialogs</b>		
▶ <i>EVA demand model</i> : The program will no longer crash if to only one side of an activity pair an activity is allocated. (10080)		
▶ <i>Procedure settings dialog "PuT operating indicators"</i> : On the "Infrastructure cost" page, copy and paste is now enabled using ctrl+c resp. ctrl+v key as well as using context menu entries. (8685)		
▶ <i>Floating dialog box "line routes"</i> : The program will no more crash after a line route is deleted, restored via "Undo", then marked and then deleted again usind "Redo". (1847)		
<b>Timetable Editor</b>		
▶ <i>Line block view</i> : Even if the time axis is displayed below, you can scroll down right to the bottom. (1399)		
<b>Graphics</b>		
▶ <i>Background texts</i> : Text files storing background text data are unicode-capable now. Even data including non-Latin characters is correctly read from file. (1842)		
<b>Demand Operations</b>		
▶ <i>Multi-Delete matrices</i> : The program will no longer crash if matrix data is accessed during 'Multi-step mode choice' or 'Estimate gravitation parameters' or 'Time-of-day choice' subsequently to the simultaneous deletion of multiple matrices. (10078)		
<b>Network Editor</b>		
▶ <i>Specify line route course</i> : If the run times are generated from the link network, now also the coupled vehicle journeys of other line routes are adjusted to the possibly changed departure times. (10025)		
<b>PuT Operating Indicators</b>		
▶ <i>Vehicle journey section service time</i> : If a vehicle journey section ends before the end of the vehicle journey and if there is another vehicle journey section which starts at the same time profile item, the dwell time at this stop point is now included in the service time of the ending vehicle journey section independent of the used vehicle combination. (9537)		
<b>Other Operations</b>		
▶ <i>Calculate PrT skim matrices</i> : Using more than oneCPU core could lead to instable results. This issue has been fixed. (10081)		
<b>PrT Assignment</b>		
▶ <i>PrT paths</i> : The program will no longer crash if the following sequence of steps is performed: a) PrT assignment calculation while the list 'PrT paths on link level' is open, b) stuctural change to the network, e.g. 'Split link', c) another PrT assignment calculation. (10085)		
<b>PuT Assignment</b>		
▶ <i>Zone statistics and overall statistics</i> : The OD pair filter bears on the attribute data of either statistics as desired now. In previous versions, these attributes used to return value 0 as long as the OD pair filter was active. (9200)		
11.52-09	Corrections, Bug Fixes and New Features (ID)	2011-05-19
<b>Add-In</b>		
▶ <i>'Procedures' window</i> : The program will no longer crash if an add-in is opened and then removed from the list of operations. (9963)		

- ▶ *'Calculate Matrix' add-in*: The arithmetic function '/' is now provided in the list. (10010)
- ▶ *Multi-edit attributes*: This dialog window opens faster now. (9954)
- ▶ *Add-ins*: A new add-in is provided which allows for commuting isochrones into POI polygons. These polygons can be used for subsequent operations, for example for 'Intersect' operations. (9923)
- ▶ *'Zone Catchment' add-in*: The program will no longer crash if the add-in is started without marking a zone. (10033)
- ▶ *SetMatrixRaw*: The method accesses the original matrix now and returns the correct order of columns of the transposed matrix. (10040)
- ▶ Now, reading Google files works correctly. (10042)
- ▶ *Add-ins*: After closing a Python script via ALT + F4, the script used to continue running internally. Thus, no other script could be started subsequently. This bug could be fixed. (9736)
- ▶ *VisumPy.helpers.Set/GetMatrix*: In the GetMatrix functions Get/SetMatrix(Raw), the matrix to be read will be determined by its CODE attribute, if the argument 'which' is a string. (9836)
- ▶ *'Google Transit Import' add-in*: This import can be performed additively to an existing network now. Especially, several data packages can be imported one by one into the same network. (9481)

### COM Interface

- ▶ The execution of scripts could be accelerated. (9993)

### Data Model

- ▶ *Create vehicle journey*: The program will no longer crash if the 'Cancel' button is used to close the open "Create vehicle journey(s)" dialog window. (10001)
- ▶ *Node geometries*: After adding a link to a main node or node with 0 legs the geometry was not adjusted correctly and incorrect geometry data used to be stored. This bug could be fixed. (10027)
- ▶ *Signalization*: Now, RBC controllers can be selected for external control in VISUM. (9470)

### Development Components

- ▶ *Python library VISUMPy*: The library has been adapted in several VISUM versions (11.0 and 11.5). Thus, add-in problems previously resulting from parallel installations of various program versions on the same personal computer will no longer occur. (9999)
- ▶ *SATURN import*: Error messages with regard to ICA will appear only if the buffer link connects to a signalized node. (9950)
- ▶ *SATURN import*: For the 'Split link' operation, the connector logic has been corrected. (9965)

### Dialogs

- ▶ *Assignment analysis*: In the assignment analysis diagram, the parameter settings always refer to the recently calculated analysis now. (9933)

### PuT Passenger Survey

- ▶ *Plausibilization of partial sets*: With version files that had been created with an elder VISUM version (binary leap in path format) the program will no longer crash if not all of the OD pairs are subject to plausibilization. (9737)

### Timetable Editor

- ▶ *Marking in the line block 'block view'*: Now, the marking responds correctly to the deletion of line block items. Under certain circumstances it might have happened in previous versions, that different block items were marked randomly if marked line block items were deleted. (9969)
- ▶ *Sequence of stops*: With a new VISUM installation, the setting for the sequence of stops calculation (classical/hierarchical) was not read from the registry. This bug was fixed. (10043)

### Graphics

- ▶ *Centered labels*: Also the centered label of a linear object (links, connectors, screenlines) will be highlighted if the edge is marked. (4408)
- ▶ *Legend wizard*: If isochrones are selected for display in the legend (2D display) and if a value less than 2 mm is set for option 'Symbol vertical' in the 'Spacing between' section, the legend will be displayed completely. The bottom used to be cut in this case. (10007)
- ▶ *Timetable - graphics parameters*: Classes set up for alphanumerical classification (e.g. for line name) are now retained. Under certain circumstances, they could have been deleted when the data was read from file. (9898)

- ▶ *Graphic parameters for PuT line bars:* If graphic parameters including line bars are read from file in the user-defined order of lines and line routes etc., all network objects will remain visible nevertheless. In former VISUM versions, other network objects in the network no longer appeared in the list. **(10019)**

### Graphical Operations

- ▶ *Selection provided for flow bundle configuration:* With 'Link' conditions, if 'Supply' shall be selected, VISUM now on any level of the line hierarchy provides all objects traversing the link. Previous VISUM versions used to provide all line and line route objects, but only those time profile and vehicle journey objects which stopped at (link/node) stop points along the link. **(10000)**
- ▶ *Shortest path search:* The program will no longer crash after initialization of the shortest path search and subsequent editing of the number of transfers. **(10053)**

### Installation

- ▶ *Codemeter:* If VISUM temporarily loses its licence (due to a computer network failure, for instance) running assignments will be frozen until the license is available again. VISUM will continue without a query automatically as soon as the licence is available again. **(8269)**

### Junction Editor

- ▶ *Network scale:* The node editor's geometrical view now takes the network scale into account. In former VISUM versions it might have happened that the link width was not displayed correctly at main nodes. **(10028)**

### Listings

- ▶ *Matrix toll:* The program will no longer crash during straps recalculation in a network without zones and links. **(5891)**

### Matrix Editor

- ▶ *Header:* a) The 'Matrix' header will be in the correct position if two matrices are opened initially for matrix processing. b) The program will no longer crash if the pointer is placed on one of the empty fields in this header. **(10054)**
- ▶ *Special matrix operation 'Projection':* Doubly-bound projection (multi-procedure) did not standardize the matrix sum by the displayed type, but by the type currently being listed on top of this one in the dialog window. This bug could be fixed. **(10011)**
- ▶ *Histogram:* The program will no longer crash if multiple rows or columns are marked by left-click and 'Shift' in the grid of intervals. **(10020)**

### Network Editor

- ▶ *Rotate background text:* The click area around the text has been enlarged to make the text selection easier. **(9810)**
- ▶ *Multi-edit:* If multi-edit cannot be applied to all selected objects but fails for several objects due to min value or max value violations, for example, then a message will appear again as known from former VISUM versions. **(10002)**

### Other Operations

- ▶ *Intersect:* When the 'Procedure parameters' window is opened, the program will no longer crash though invalid network object types have been selected for intersect operations. **(10037)**

### Miscellaneous

- ▶ Using the (out-dated) hardlock dongle with Vista could have caused a program crash if the dongle was not attached when the program was started. This bug could be fixed. **(8707)**
- ▶ *Options, list of most recently used files:* VISUM no longer crashes if the value 0 has been entered. **(1598)**

### Subnetwork Generator

- ▶ *Subnetwork generator:* 1) Even if a vehicle combination's attribute 'Vehicle combination set' includes the vehicle combination itself, a subnetwork can now be generated. 2) Even with a crosswalk whose link is not within the partial network, a subnetwork can now be generated. **(9981)**

### PrT Assignment

- ▶ *ICA, HCM 2010:* Now, VISUM can calculate the node impedances according to HCM 2010 for

nodes of the control type 'signalized' (pre-timed), 'two-way stop' and 'two-way yield', 'all-way stop' and 'roundabout'. (884)

- ▶ *ICA for signalized nodes*: ICA can no longer be calculated, if the turn types of a leg are not sorted correctly (left turns being placed to the right-hand side of through turns, for example), since this would produce incorrect results. (9955)
- ▶ *TRIBUT\_Equilibrium*: This operation will no longer regard the area toll. Only the link toll is taken into account now. (10023)

### PrT & PuT Assignment

- ▶ In the case of repeated calculations of the headway-based assignment, for example in the framework of a demand model using feedback, the memory requirements used to increase heavily with each iteration. This behavior could be improved. (1439)

11.52-08

Corrections, Bug Fixes and New Features (ID)

2011-04-17

### Add-In

- ▶ *'Calculate Matrix' add-in*: If the matrix code contains special characters such as ä or ß, for example, and if the add-in is saved to file ('Procedures' window), the program will no longer crash when this matrix is opened later. (9940)
- ▶ *'Create Regular Timetable' add-in*: Running this add-in will no longer cause a program crash, if the option has been checked in the 'Attribute?' column and if the attribute 'coupled' has been selected in the 'Headway1' column. (9813)
- ▶ *'Create Regular Timetable' add-in*: The 'Cancel' button provided with the progress bar works correctly now. (9814)
- ▶ *Executing add-ins in the procedure flow*: If an add-in is run via 'Procedures' without previous parameter selection, then the completeness is queried now. (9727)
- ▶ *'Calculate Matrix' add-in*: Any overflow is recorded now during the calculation. (9942)
- ▶ *'Vehicle Usage Profile' add-in*: This add-in is 64bit-compliant now, since TK is no longer used. (9413)

### Data Model

- ▶ *Main turns Multi-edit*: For editing, public transport systems that are not permitted on main turns are no longer provided. (1423)
- ▶ *Display of sub-attribute values*: If a network object type (matrix or demand segment, for example) is used as sub-attribute and if there are objects without name, then the object's number and code will be displayed instead of the object's number and name. (1591)

### Development Components

- ▶ *SATURN*: Without PuT, the ',' mark will no longer appear at the end of the character string when reading TSYS data from file. (9966)
- ▶ *SATURN*: Closed links will no longer be opened for transport systems when the PuT lines table is read from the network file. (9948)

### Dialogs

- ▶ *'TFlowFuzzy' parameters window*: It can more clearly be seen now, that turn count data regard turns and main turns as well. (9684)
- ▶ *Copy line route*: The length of the "Name" input field is no longer limited. (9826)

### PuT Passenger Survey

- ▶ *Plausibilization*: If not only the specified line but also other lines are permitted for the survey path leg and/or the preceding or succeeding path legs, then the search for fitting lines will verify whether the transport system is permitted for the demand segment's mode. (9971)

### Graphics

- ▶ *Transparent colors for backgrounds*: Transparent colors in backgrounds are drawn correctly now, if option "Transparent" has been checked. (9961)
- ▶ *Backgrounds DWG/DXF*: Backgrounds in either AutoCAD format DWG or DXF can now be displayed in 64 bit editions, too, though the display quality does not yet reach the 32 bit quality. (9941)

## Graphical Operations

- ▶ *Shortest path search PuT-Sys*: The search will no longer cause a program crash if the network contains connectors that are not open for any transport system. (9949)
- ▶ *Shortest path search*: After selection of a different mode, the original mode was regarded for the search by mistake. Thus transport systems which did not correspond to the currently selected mode could be used. This bug could be fixed. (9970)
- ▶ *PuT flow bundle*: Executing the flow bundle calculation if only a TSys-based assignment is available will no longer cause a program crash. (9763)

## Matrix Editor

- ▶ *Copy the diagonal to clipboard*: This functionality is provided again. Both decimal separator settings under 'Options' and the maximum number of decimal places specified for the clipboard are no longer ignored. (1377)
- ▶ *Undo and Redo*: Even if the focus is not on the network window, these buttons and also the corresponding shortcuts are provided. (9817)

## Demand Operations

- ▶ *'EVA trip generation' procedure*: Versions which were saved to file after the deletion of an allocation of person groups and/or structural properties to demand strata in the demand model could not be read from file later. This bug could be fixed. (9951)

## Network Editor

- ▶ *Marking line routes by mouse-clicks on stop points or nodes*: Now, a message appears in the status bar, if previous clicks are discarded because the number of hits has become zero. (9463)
- ▶ *Network check*: The 'Viability for ICA' check now also verifies, whether a signal controller has been assigned to a signalized node or main node. (9959)
- ▶ *Path set selection*: In certain cases, clicking the OK button caused a program crash. This bug could be fixed. (9945)

## Other Operations

- ▶ *'Signal offset analysis' procedure*: Instead of 0s as it used to be, an overloaded signal group's wait time is 100000h now. (9904)

## PrT Assignment

- ▶ *DUE with calendar and usage of time intervals as analysis time intervals*: Now, the analysis period is automatically enlarged to such an extent so that all DUE time intervals can be taken over. (9944)
- ▶ *Assignment with ICA*: If the option "Use the turn capacity for the blocking back model" is not checked whereas the option "Set the global blocking back model parameters ..." is active, then the blocking back parameters are set correctly now at ICA nodes. (9956)

## PuT Assignment

- ▶ *Timetable-based assignment, 'Calculate paths from'*: Now, all demand segments are provided for source selection. The suitability is not checked until the procedure is executed. (1678)

11.52-07

Corrections, Bug Fixes and New Features (ID)

2011-03-31

## Data Model

- ▶ *Signal controllers (SCJ)*: By default, always 'Intergreen matrix' is set for option 'Use intergreen method' for VISSIG controls. (9861)
- ▶ *PrT paths*: In previous versions, the program might have crashed, since PrT paths could manually be added for demand segments that had been assigned by means of one of the TRIBUT methods. Now, PrT paths can no longer be added. (9919)

## Dialogs

- ▶ *Matrix overview*: The arrow keys of the keyboard work correctly now, the marking no longer returns to the "All matrices" entry. (9888)
- ▶ *Shapefile import*: Checking option "Read additively" will no longer reset the current "Read as" and "Imperial units" options. (9922)

## Timetable Editor

- ▶ *Create vehicle journey*: In some cases the system crashed when an user clicked "Cancel". This error has been corrected. **(9819)**

## Filters

- ▶ *Filter file, paths*: Objects that have been selected are now also written into the filter file for paths. **(1465)**

## Foreign Formats

- ▶ *Database export*: Now, the data export skips the same data as the 'Save network' operation does, for example certain vehicle journey items and certain node geometries. **(9928)**
- ▶ *Shape export of links, undirected*: To attributes that refer to the retour direction ("R\_...") the correct number of decimal places is applied in the DBF file now. **(9868)**
- ▶ *Shapefile export*: Now the right type is assigned to numerical attributes. Example: If attributes of the "Time" type are displayed in the "hh:mm:ss" format, they are now assigned the "Text" type. **(1318)**

## Graphics

- ▶ If a node is clicked while the network is being drawn, POIs will be displayed correctly. **(127)**

## Graphical Operations

- ▶ *Shortest path search PuT-Sys*: Link run times of 100,000 h will no longer cause a program crash. **(9906)**

## Junction Editor

- ▶ *Turn volumes*: The "Junction editor" menu has a new option where the user can specify whether the angles of the link polygons or link orientations should be used for the display. **(9895)**
- ▶ *External controllers*: With .\ as the project directory, the conversion to an external control used to return the inapplicable message "Changing to another directory is not permitted". This bug could be fixed. **(9896)**

## Listings

- ▶ Deleting a vehicle journey which is visible in the arrivals/departures list of a stop point will no longer cause a program crash. **(9894)**
- ▶ *'Toll matrices' list*: Under certain circumstances, maximizing or other changes to the size of the list window caused a program crash. This bug could be fixed. **(9899)**

## Matrix Editor

- ▶ *Splitting*: The matrix editor now comprises a special matrix operation for splitting external matrices. **(5270)**
- ▶ *Matrix comparison*: Similar to the network window handling, the 'Set window section mode' is provided with the matrix comparison (via 'hand' icon or space bar). **(9807)**

## Network Editor

- ▶ *Special function "Set polygon allocation"*: If the user clicks "Attribute to be set", now a correct set of selectable attributes is displayed. **(9883)**
- ▶ *Edit line route shape*: The parameter 'For the re-routed section, generate the run time from the link network' is only displayed during re-routing. **(1492)**
- ▶ *Edit demand strata*: If several demand strata were marked in the 'Demand strata' tab of the 'Edit zone' window, the entered value used to be stored with the most recently marked demand stratum only. This bug could be fixed. **(1572)**
- ▶ *Line route shape editing*: In the "Generate run time data from link network data" mode the summing up of values sometimes caused an overflow and, as a consequence, negative time profiles. This error has been corrected. **(9852)**

## Network Comparisons

- ▶ After changes to one direction of the line route course, some model transfer files used to store both directions by mistake. **(9901)**

## PuT Operating Indicators

- ▶ *Earliest departure / latest arrival*: For these attributes, correct values are returned now per

analysis time interval. (9920)

- ▶ *Number of departures of line route loops*: The correct number of arrivals/departures is returned now for stop points at which line route loops start and end. (9892)
- ▶ *Number of departures from stop points or stops*: For vehicle journeys with a stop event crossing the midnight mark the correct value is returned now for the attribute 'Number of departures' per stop and stop point, respectively. (9916)
- ▶ *Operation "Init PuT operating indicators"*: Now by default all options are enabled. (9637)

#### Other Operations

- ▶ *Signal offset optimization*: Now, this operation excludes the OD pairs connecting signal groups of the same signal controller, since their offsets are not subject to changes. This case is only relevant if a signal controller has been allocated to several (main) nodes. (9917)
- ▶ *Parallelization*: In certain cases, running various parallelized operations by turns caused a program crash. This bug could be fixed. (9927)

#### Subnetwork Generator

- ▶ *Subnetwork generator*: Also for nodes and main nodes which are located in a peripheral position both geometry and signalization data is stored with the subnetwork. (9824)

#### PrT Assignment

- ▶ *ICA, signalized nodes*: ICA caused an endless loop if a signalized node had more than eight orientations. This bug could be fixed. (9939)
- ▶ *ICA, two-way nodes*: Inapplicable messages on faulty turn types for split node legs used to be returned though the node legs had been modeled correctly. This bug could be fixed. (9937)
- ▶ *ICA*: During ICA computations, warnings are marked accordingly now and will no longer be stored with the error file, but recorded in the trace file instead. (9913)

#### PuT Assignment

- ▶ *Transport system-based assignment*: Recalculating this procedure after changes to the filter settings did not return different results, since the search graph used to be retained. This bug could be fixed. (9910)

11.52-06

Corrections, Bug Fixes and New Features (ID)

2011-03-17

#### Add-In

- ▶ *'Load Matrix' add-in*: This new add-in makes it possible to transfer data from an Excel workbook into a VISUM matrix. (9582)

#### COM Interface

- ▶ *ISignalControl*: Under certain circumstances, the method ApplyTemplateOnNode/MainNode did not work correctly, but returned an insufficient number of allocations (signal groups and lane turns) by mistake. This bug could be fixed. (9842)

#### Data Model

- ▶ *Signal offset optimization*: Also for external controllers, the time offset is determined correctly now (no rounding errors). (9864)
- ▶ *Relation 'Turn - Turn standard'*: The relationship of turns and turn standards is now based on the actual type of the turn. Previously, a computed value was regarded by mistake. (9860)

#### Development Components

- ▶ *SATURN*: The SATURN Importer now stores the data required for ICA. To leftmost (or rightmost, if applicable) turn movements without allocation to any signal group, a signal group with permanent green is assigned. (9825)

#### Dialogs

- ▶ *Edit line route*: Now, closing the dialog window via Esc always cancels the operation. (9569)
- ▶ *Classification settings, edit colors*: VISUM will no longer crash if either "Redefine" or "Edit colors" is chosen. (9840)
- ▶ *Signal time-space diagram, edit classification, redefine*: The stroke layer control is preset correctly by default and changes to the settings will not cause problems. (9841)



## Timetable Editor

- ▶ *Line block display*: Now, the pre-preparation times are displayed correctly in the upper view section, even if the service trip starts precisely at the date limit. (9821)
- ▶ *Vehicle journey section view*: Moving the focus cell via Arrow key works correctly now. (9539)

## Filters

- ▶ *POI-filter*: Files with filters on POIs are read without error. (9812)

## Foreign Formats

- ▶ *EDF export*: The EDF export works correctly now. (1369)

## Signal time-space diagram

- ▶ The 'Draw' button provided with the graphics parameters for signal time-space diagrams is no longer ignored. Closing the path selection dialog via 'Cancel' now discards the current selection. (9848)

## Junction Editor

- ▶ *Execute procedure*: In certain cases, the program used to crash if a procedure was executed while the junction editor was open. (9854)

## Listings

- ▶ *'PuT paths' lists*: If a version is read from file which contains PuT path lists (or path legs or OD pair lists), the DSeg will be restored that was selected when the data was saved to file. (9818)
- ▶ *Copy to clipboard*: This action will no longer discard the associated units and never again imperial units will be converted into metric units. (9829)
- ▶ *Length data without units*: Length data entered without unit will be stored correctly even if either [m] or [ft] is the displayed unit. (9850)

## Matrix Editor

- ▶ *Matrix selection*: If the target matrix of an arithmetic operation is a VISUM zone matrix, then no main zone matrices will be offered as operands. (9698)
- ▶ *Matrix editor, Binary functions*: Optionally widen target matrix if it's an external matrix and the source is a matrix with not matching key set. (5562)
- ▶ *Format \$B*: Matrices in \$B format are correctly read from file. (9822)

## Other Operations

- ▶ *Signal offset optimization*: Now, the optimization works with the assignment procedure LUCE, too. (9866)

## PrT Assignment

- ▶ *TRIBUT-Learning procedure, matrix toll*: Some bugs could be fixed in this context, e.g. the direct Strap-Strap transfer within a toll system is no longer permitted now. (9855)

## PuT Assignment

- ▶ *Timetable-based assignment without MPA*: In certain cases, the connector node per route was not set correctly if paths were saved as routes. This bug could be fixed. (9827)
- ▶ *Assignment regarding connector shares*: If MPA is used, the OD pair filter will always be taken into account correctly. (9828)

## TFlowFuzzy

- ▶ *Open/Save version*: The indirect attributes selected in the 'Count data PuT' tab of the TFlowFuzzy parameters dialog are stored now when the the version file is saved and re-opened. (1466)

11.52-05

Corrections, Bug Fixes and New Features (ID)

2011-03-02

## Add-In

- ▶ *'Split P+R Matrices' add-in*: This add-in runs significantly faster now. (9782)

## Dialogs

- ▶ *Link dialog box*: The displayed vCur and tCur-PrTSys values always depend on the current basic

volume regardless of the attribute chosen for basic volume values. (9109)

- ▶ *Graphic parameters, classification*: The classes used to be interchanged if the user switched to the "Uniform drawing mode" while the first line in the grid was not selected and if the option "Classified drawing mode" was selected again subsequently. This bug could be fixed. (1340)
- ▶ *'Create trip from empty trip' dialog box*: The program will no longer crash if the line block has no vehicle combination. (1641)
- ▶ *Delete time profiles*: Deleting multiple time profiles of a line route turned out in time delays for the GUI update. This problem could be solved. (9798)
- ▶ *Filter dialog box*: Similar to the button labels with simple operators, the operators in the drop down box show mathematical signs (like ">") now instead of text ("greater than"). (9780)
- ▶ *'Edit block item' dialog box*: For empty trips which are based on a system route, the name of the used system route is displayed now with the line block items of the empty trip. (9779)

### Timetable Editor

- ▶ *Line block display*: The blocks representing the service trip and the respective layover block items are no longer displayed separately. (971)
- ▶ *Add attributes to tabular timetable*: An indirect vehicle journey section attribute ("Valid day\Name") used to be placed in the wrong position if a direct vehicle journey attribute with the same ID ("Name") was displayed simultaneously. This bug could be fixed. (9739)
- ▶ *Line block display*: As known from the network view, you can temporarily switch to the "Set window section" mode (mouse pointer = hand) via the space bar in the line block display. (9328)

### Filters

- ▶ *Hierarchical filter*: The program will no longer crash if the 'Preview' button is clicked after adding a filter condition without value entry or attribute selection. (1202)

### Junction Editor

- ▶ *List in the junction editor*: This list which sometimes is empty has a context-sensitive menu now. Via this menu, you can visualize the blocked turns, for example. (9238)

### Listings

- ▶ *Synchronization of list and network editor*: The synchronization of lists with the network editor is intercepted as soon as more than 100 objects are marked. (6539)
- ▶ *'PuT paths' lists*: If a version is read from file which contains PuT path lists (or path legs or OD pair lists), the DSeg will be restored that was selected when the data was saved to file. (9818)
- ▶ *Copying user-defined list sections*: Also marked sections which are out of square can be copied to the clipboard now. For the 'Paste' operation in Excel, for example, a surrounding overall-rectangle is used then. (7725)
- ▶ *Legs list*: In a list sorted by a column the sort sequence could not be retained if the data was edited in a marked section. Thus, the new value was allocated to the wrong objects. (9805)
- ▶ *'PuT paths' list, fares*: The fare is displayed correctly now, if a column listing an indirect 'PuT relation' attribute is displayed simultaneously. (9808)

### Matrix Editor

- ▶ *Split-based matrix update*: Now, matrices being displayed in the matrix editor will be updated immediately if a zone is split in the network window. (8806)
- ▶ *Histogram labels*: 1) The new option 'Number of decimal places' is provided now for interval boundaries 2) The x-axis label is wrapped now and remains completely visible even if there are many columns. (5801)
- ▶ *Number of decimal places*: When a new matrix editor window is opened, the number of decimal places is in accordance with the 'Extras - Options - Matrix editor' settings. (9335)
- ▶ *Markings*: Row and column headers are marked now when matrix data is marked or edited. (9508)
- ▶ *Matrix comparison*: An improved procedure is used for the determination of the levels of gray. Thus, the clearness of the graphical display has improved. (9618)
- ▶ *Markings*: If a row header is marked, the entire row will be highlighted. (9751)
- ▶ *Overflow*: If an arithmetic operation causes an overflow in any cell, the operation will be terminated and an error message will appear. (9789)
- ▶ *Aggregation*: VISUM used to crash (1) if the conditions included row numbers which were missing in the matrix, or (2) if the matrix was not square. These bugs could be fixed. (9790)
- ▶ *Read external matrices from file*: Since VISUM version 11.52-03, zone numbers which were not

stored in the 'double' format in external matrices could not be read from file. This bug could be fixed. (9806)

#### Demand Operations

- ▶ *Tour-based model - Combined trip distribution/mode choice*: The 'exp' operation is performed only as often as required now when the distribution is calculated with log sum over all mode utilities. (9804)

#### Other Operations

- ▶ *'Edit matrix' procedure*: If a MUULI log file is used, the procedure will no longer terminate with an incorrect error message mentioning improper zone numbers. (9778)

#### PuT Assignment

- ▶ *Skim 'adaptation time'*: An incorrect skim value used to be returned if option "Consider connections with DeltaT > 0, if connections with DeltaT = 0 exist" was unchecked and the last demand interval included both connections with DeltaT = 0 and those with DeltaT > 0. This bug could be fixed. (9787)

#### VISUM Files

- ▶ *Read version from file*: Though there was sufficient memory available, VISUM used to cancel the reading process of version files including extensive matrices and returned "Out of memory". This bug could be fixed. (9801)
- ▶ *Read version from file*: In certain cases, the process used to terminate when reading the assignment parameters from a version file. This bug could be fixed. (9802)

11.52-04

Corrections, Bug Fixes and New Features (ID)

2011-02-17

#### COM Interface

- ▶ *File names*: To file names entered without file extension, no file extension is added now. (9764)

#### Data Model

- ▶ *Split link*: The UNDO action after splitting a link could cause a program crash if the active filter referred to lane turns. This bug could be fixed. (9766)

#### Dialogs

- ▶ *Dialog box for the 'Edit attribute' procedure*: The program will no longer crash after changing the target attribute from an alphanumerical attribute to a numerical one, if another source attribute is selected subsequently. (6092)
- ▶ *Demand data export (DMD), storage location for matrices*: This dialog box supports Copy&Paste for the file name entry when demand data is saved to DMD file. (9776)

#### PuT Passenger Survey

- ▶ *Read survey data, multi-row format*: If the data contained an error, not only the incorrect data record was not read from file, but also the subsequent one. This bug could be fixed. (9769)

#### Graphics

- ▶ When exporting a screenshot, sizes (in mm) will now be scaled correctly. (1193)

#### Listings

- ▶ *Split link*: If the assignment result was reset after splitting a link, a program crash occurred under certain circumstances. This bug could be fixed. (9753)

#### Matrix Editor

- ▶ *Matrix editor, 'Projection'*: With XML files, correct zone data is stored. (9760)
- ▶ Matrices can be dragged from matrix browser to an already opened matrix editor or matrix histogram window. (5131)
- ▶ *Matrix editor, 'Set values conditionally'*: The functionality has been extended. (5717)
- ▶ *Matrices, format \$O*: Now, negative values are regarded when the matrix is saved to file. (1179)

#### Demand Operations

- ▶ Gravitation parameter estimation (Kalibri): Now, the parameter c has the correct leading sign, the

previous sign was incorrect. (9774)

### Network Editor

- ▶ *Junction editor*: If invalid link orientations have been defined at nodes or main nodes, the message "Invalid attribute value" appeared in rare cases and the program session was closed. This bug could be fixed. (9773)

### PuT Line Blocking

- ▶ *Line blocks*: A new calculated attribute is provided which includes any activity except for layovers in depots. Thus the "Time outside of depot" attribute sums up all manpower requirement times. (1061)

### PrT Assignment

- ▶ *Skim calculation*: Even if paths exist for an OD pair, though the matrix does not fit, the calculation works correctly now. (9754)

### PuT Assignment

- ▶ *Headway-based and Timetable-based PuT assignment*: The program will no longer crash if more than one computation kernel is used for the assignment and fares are calculated during assignment. (9765)
- ▶ *Skim calculation by TSys*: The procedure is performed correctly now even if there is no demand available. (9752)
- ▶ *Connection export*: Only the fares of the demand segment that has been selected in the dialog box are saved to file now. For paths of other demand segments, fare = 0 is stored. (9759)

### VISUM Files

- ▶ *Read network additively*: VISUM used to crash if the \$ZONE table had to be skipped for any reason. (9756)
- ▶ *Read survey data*: The program will no longer crash when trying to read multi-row survey records as attribute file. This is still possible via the 'Read survey data' procedure, but now a detailed message appears when the user tries to read survey records from an attribute file. (9761)

11.52-03

Corrections, Bug Fixes and New Features (ID)

2011-02-02

### Add-In

- ▶ *Run VBA*: Now an add-in is provided that executes a VBA function which is stored in an Excel sheet. (5788)
- ▶ *'Calculate Matrix' add-in*: To the trace file, both the number and the matrix total of edited matrices are logged now. (2988)

### COM Interface

- ▶ *Python scripts*: Procedures containing Python scripts can be executed from other Python scripts again, provided the inner scripts do not use wx. (9714)

### Data Model

- ▶ *Conversion of toll system co-ordinates*: The x and y co-ordinates of toll systems are now converted correctly when the projection is changed. (9722)
- ▶ *WKT surfaces*: Also for multi-part surfaces, VISUM creates correct WKT descriptions now. (9735)
- ▶ *WKT*: The handling of WKT attributes at network objects was not correct, various bugs could be fixed. (9553)

### Dialogs

- ▶ *Graphic parameters window, classification settings*: With classification attributes having the string format "Percent", no unneeded error messages will appear while the classification settings are edited. (9636)
- ▶ *Matrix selection (various cases)*: The program will no longer crash if OK is confirmed though nothing has been selected. (9744)
- ▶ *Operator properties*: The operator name which used to be mandatory is an optional attribute now. (9746)

## PuT Passenger Survey

- ▶ Shortest path search (timetable-based assignment using the shortest path search or passenger onboard surveys or interactive shortest path search): Less memory is required now while the transfer times are still returned correctly. (1063)

## Timetable Editor

- ▶ *Line block display*: Empty trips and user-defined block items can be shifted by drag&drop now, furthermore they can be placed horizontally on the time axis. (9329)

## Foreign Formats

- ▶ *Shapefile export*: Optionally, VISUM can store the z-coordinates of nodes and link polygons (PointZ format and PoyLineZ format). (9696)

## Graphics

- ▶ *Drawing lines with width = 0*: Those lines will no longer be drawn by mistake in the node flow (edges, circle) display and in the preview window for line graphic parameters. (9728)

## Junction Editor

- ▶ *Junction editor*: The program will no longer crash if network objects (e.g. a signal group) is deleted in the junction editor while a filtered viewing mode (Show only permitted turns, for example) is active. (9634)

## Matrix Editor

- ▶ *Matrix editor, 'Projection'*: The functionality has been extended. (5332)
- ▶ *Matrix editor, 'Add external matrix to the network model'*: The functionality has been extended. (5476)
- ▶ *Matrix editor, Binary functions*: Optionally widen target matrix if it's an external matrix and the source is a matrix with not matching key set. (5562)
- ▶ *Matrix editor, 'Set values conditionally'*: The functionality has been extended. (5717)
- ▶ *Matrix editor, 'Aggregate'*: The functionality has been extended. (5252)
- ▶ *Matrix selection (various cases)*: The program will no longer crash if the node "All matrices" is selected though there is no matrix available. (9721)

## Demand Operations

- ▶ *EVA weighting*: If the competing walk time is shorter than the journey time of a mode, the evaluation is set to 0. In previous versions, negative evaluation values were returned in this case, and thus a negative demand (due to multiplication by positive balance factors). (9749)

## Network Editor

- ▶ *Floating dialog boxes for line routes and PrT paths*: The program will no longer crash if the user selects a network object by mouse-click and checks the option "Only active ones" subsequently. (9733)
- ▶ *Hierarchical filters*: Those filter settings (lines, stops) are evaluated as often as a new object is created by duplicating an existing object on any hierarchy level. In previous versions, the newly created objects might have been in the active state though they did not satisfy the filter conditions. (1058)
- ▶ *Link properties window*: When toggling between the two link directions via the "Opposite" button, also the undirected volume values are displayed correctly now. (9718)

## Miscellaneous

- ▶ *Documentation*: The Russian and Chinese attribute documentations have been added to the file 'attribute.xls'. (1054)

## PuT Line Blocking

- ▶ *Line blocking*: The 'Detailed line blocking' procedure runs much faster now. (1056)
- ▶ *Detailed line blocking*: If a comparison solution is used which has closed blocks with overnight layovers in depots, no longer empty solutions (i.e. no line blocks) will be returned. (1059)
- ▶ *Detailed line blocking*: Line blocking with vehicle interchange will no longer cause a program crash if all chains of an intermediate solution do not permit any common alternative vehicle. (1064)

## PrT Assignment

- ▶ *TRIBUT-Equilibrium assignment*: Even if several demand segments use the same transport system, no negative volume values will be returned. (9724)

## PuT Assignment

- ▶ *Timetable-based assignment*: The program will no longer crash if several computation kernels are used and the search of the timetable-based procedure takes the impedances of the trips into consideration. (9732)

## VISUM Files

- ▶ Read network (frequently used cases): The conflict handling settings now work with additive network reading of a selected "frequently used case". Previously, these settings were ignored internally though the window was displayed on screen. (9725)
- ▶ *Procedure parameters file XML*: Some parameters of the object 'EquiStopCriteriaPara' are saved to file with more decimal places, they can be read from file, too. (9740)

11.52-02

Corrections, Bug Fixes and New Features (ID)

2011-01-18

## Add-In

- ▶ *Run VBA*: Now an add-in is provided that executes a VBA function which is stored in an Excel sheet. (5788)

## COM Interface

- ▶ *Get/SetMatrixRaw*: The program will no longer crash when one of these methods is applied. (9685)
- ▶ New methods in VisumPy.helpers speed up access to matrix data from scripts / add-ins which are executed from within VISUM. (1634)
- ▶ *Read attribute data*: By mistake, access to certain attributes with only few valid values (enums) returned numbers instead of alphanumerical chains. Access to attributes of the transport system set type returned error messages. These bugs could be fixed. (9676)
- ▶ Setting the attribute 'ControlType' on Nodes through COM now accepts the values 5 (Roundabout) and 6 (two-way-yield) (9673)
- ▶ *IMatrix::SetDiagonal*: This method works correctly now. (9693)

## Data Model

- ▶ *Links, number of lanes*: VISUM will no longer crash if the number of lanes is edited at a link with crossing lane turns. (9688)

## Development Components

- ▶ *SATURN*: The SATURN documentation is now part of the VISUM documentation. (9661)

## Dialogs

- ▶ *Attribute selection dialog*: Under certain circumstances, creating a UDA could cause a program crash. Example: Shapefile import. This bug could be fixed. (9655)
- ▶ *EVA trip generation*: The display of productions and attractions now depends on the o-d type of the activity pair. (9500)
- ▶ *Save matrix as*: If the filename was empty before, the message 'Enter file name' no longer appears after input of the matrix file name. (9675)
- ▶ *Links*: VISUM will no longer crash if relations to other network objects are used in the network settings for base volumes. (9690)

## Difference Network

- ▶ *Version comparison*: *Version comparison* > *Volume difference links* > *Cross-section display*: For values missing in one of the versions, negative volume data (-65536) will no longer be displayed. (1051)

## Foreign Formats

- ▶ *Shapefile-Import*: No polygon can be created for polylines and polygons with an insufficient number of points. Isolated points are now used for labelling (network object position). (9670)
- ▶ *EMME/2 import*: Fixed rhythm EMME line data (headways) are read as minutes now. Used to be

read as seconds by mistake. (9697)

- ▶ *Save database*: The current language is stored in the version data block for database export, if either a network or a database with a different language was opened before. Previously, data could not be read from file if the languages were not identical. (9708)

## Graphics

- ▶ *Print frame*: The buttons for alignment work now. Images in the print frame are not necessarily left-justified now. (9611)

## Signal time-space diagram

- ▶ *Signal time-space diagram*: For the preset maximum signal time, the default has been improved. (9692)

## Junction Editor

- ▶ *ICA report*: VISUM will no longer crash when trying to update the ICA report after manual changes to this report and overwriting by VISUM is prevented via 'Cancel'. (9679)

## Network Editor

- ▶ *Aggregate lines*: Aggregation of disjunctive time profiles did not work correctly, several bugs could be fixed. (9680)
- ▶ *Multi-delete nodes*: Using option 'Clear Undo stack to save RAM' could cause a program crash. This bug could be fixed. (9622)
- ▶ *Edit line route shape*: Links that have been opened for the transport system during interactive re-routing of a line route are now logged to trace file. (9165)
- ▶ *Aggregate line routes*: The procedure will no longer terminate if the time profile names differ in upper and lower case only. (9658)

## Other Operations

- ▶ *Matrix disaggregation*: The procedure has been accelerated. (9652)
- ▶ *Calendar / assignment period*: Assignment periods outside of the calendar period are adjusted without warning. (9668)
- ▶ *Signal timing optimization for VISIG controls*: The program will no longer crash if all signal groups have permanent green. (9678)

## PrT Assignment

- ▶ *ISA, signalized node*: The critical path calculation has been changed in a way, that paths with delay 0 do not automatically have priority over other paths. This might lead to deviating results for the volume/capacity ratio of nodes. Especially it can be avoided in many cases, that signal groups having permanent green are considered to be critical. (9612)
- ▶ *Assignment with ICA*: The program will no longer crash if the blocking back model is active and no path can be found. (9671)

## PuT Assignment

- ▶ *Memory consumption, read version*: Compared to VISUM 11, reading a version file including PuT assignment result data required much more memory with VISUM 11.5. The memory consumption could be reduced. (1050)

## VISUM Files

- ▶ *Read network / Database import with vehicle journey items*: Reading data from file used to fail and returned the message, that the attribute data is not subject to changes. This bug could be fixed. (9711)
- ▶ *Save DMD file*: Table 'Matrix entries' is visible even if option 'Hide empty tables' has been checked. (9674)
- ▶ *Read network, couplings*: Reading coupling data from file will no longer return errors. (9666)
- ▶ *Reading PuT routing of the network*: No longer unwanted error messages appear if a user wants to use existing line routes with associated stop points on links. VISUM no longer crashes if in this scenario existing line routes are not used. (9300)
- ▶ *ATT file import / clipboard*: When 'Create' is confirmed in the dialog, a warning appears now if an origin attribute ID is not valid (with number in first position, for example) and thus no UDA can be created. (9664)
- ▶ *Save version, connectors*: Connector UDAs were not stored correctly and could therefore not be

read from file correctly. When a version file was opened, the connector data was not allocated to the appropriate connector. This bug could be fixed. Version files created with previous VISUM 11.5 versions cannot be restored correctly. Network files are not concerned. (9700)

- ▶ *Save network / Database export with vehicle journey items:* If option 'Hide empty tables' has not been checked, then an empty vehicle journey items table will not be stored after call via COM; with interactive call, the checkbox next to the table vehicle journey items is unchecked. (9702)

11.52-01

Corrections, Bug Fixes and New Features (ID)

2010-12-21

#### Add-In

- ▶ *Matrix add-ins:* Any add-in accessing matrices runs significantly faster now. (1637)
- ▶ *Add-in EVA-Evaluation:* Several functionality and GUI problems could be solved. (9609)
- ▶ *Matrix Convolution:* The procedure runs much faster now. (9608)

#### Data Model

- ▶ *Delete vehicle unit:* With networks containing system routes and specific vehicle combination run times VISUM will no longer crash, if a vehicle unit is deleted and either Cancel or Undo is clicked subsequently. (9600)
- ▶ *Demand models, create a process flow:* Faulty data will no longer be generated if the model does not include the PrT mode or any demand segments. (3226)
- ▶ *Attributes of time series items:* For time series items, the new output attributes "Share" and "AccumShare" are provided and can be accessed via the COM interface. (9557)
- ▶ *Stage-based signal control:* Changes to the allocation of signal groups to stages could create faulty data. Thus, error messages appeared when the version file was opened later. This bug was fixed. (9613)

#### Dialogs

- ▶ *Links dialog:* If indirect attributes are used for the detailed definition of the PrT impedance, the links dialog no longer crashes. (9623)
- ▶ *Links dialog:* The value range check for v0 and length has been corrected. (1046)
- ▶ *Save procedure parameters:* When saving procedure parameters in some cases a file name with the extension \*.xml is displayed. In this case also the dialog switches to the file type \*.xml to avoid the creation of a file with the extension '.xml.par'. (9313)

#### Foreign Formats

- ▶ *Access import:* Now, the re-import of network data is possible even if the database once was created by export of listed attributes. (965)
- ▶ *SATURN import:* If connectors have been defined for buffer and simulation networks, the mid-link is connected and new links are generated with appropriate attributes. (8930)
- ▶ *Shapefile import:* Normalization and harmonization of data will only be performed if necessary. (9591)
- ▶ *SATURN import:* Now, the TSysSet of turns is filled correctly. Furthermore, the turn type and the node's method for node impedance calculation are allocated automatically. (9601)
- ▶ *Tour based demand model:* Now, reading VHD files runs as fast as it used to in VISUM version 11. (9624)
- ▶ *Additive database import:* The option "First of all, determine existing tables" works correctly now. (9607)

#### Graphics

- ▶ *Edit classification settings:* Now the color allocation controls are active when the dialog is opened with only one specified class and the color settings are subject to changes. (9602)
- ▶ *Flow bundle bars:* If the bar distance differs from 0, flow bundle bars are shifted. (1032)

#### Listings

- ▶ *Cells without data:* Under certain circumstances, cells without data were created in lists which used to remain empty even during export as attribute file. The cell value could only be called by mouse-click in the empty cell. This bug was fixed. (9302)

#### Matrix Editor

- ▶ *Delete intervals:* The program will no longer crash when all matrix histogram intervals are deleted if level 4 has been chosen for the activity protocol. (9616)



- ▶ *Simultaneous processing of matrices*: The program will no longer crash if more than 64 matrices are edited simultaneously. (9633)
- ▶ *Matrix editor*: Now, the diagonal data can be copied to the clipboard and pasted from the clipboard, too. (5099)
- ▶ *Sum output in the status bar*: The status bar now shows the total matrix sum and the sum of the diagonal of the displayed matrix. (5772)
- ▶ *"Round" functionality*: Rounding to 0 will no longer be treated like division by 0 by mistake. Furthermore, the default value for rounding was changed. (9509)

#### Network Editor

- ▶ *Status bar*: Even during changes to the network, the information displayed in the status bar will not be switched off. (9454)
- ▶ *Read network additively*: Directed stop points on links could not be read correctly. Subsequently, drawing the line route could cause a program crash. These bugs were fixed. (9596)

#### Other Operations

- ▶ *Intersection of linear objects*: The intersection of linear objects (except for links, line routes and PrT paths) used to calculate shares that were too small. Thus, incorrect results were returned. Now, the calculation is correct. (976)
- ▶ *Signal cycle and split optimization, VISSIG*: The calculation used to return incorrect results if lane groups with multiple lanes existed which had the same signal group. This bug could be fixed. (9653)
- ▶ *ICA, signalized nodes*: The ICA calculation was not necessarily correct if the opposite leg of a left-turn had no straight volumes. This correction might cause different results calculated by the assignment with ICA. (9654)
- ▶ *Intersect*: The intersection of linear objects and polygons runs much faster now. (977)

#### Miscellaneous

- ▶ *TSys codes with special characters*: VISUM will no longer crash when the attribute selection window is opened if the code of a transport system includes special characters. (9615)

#### PuT Line Blocking

- ▶ *PuT interlining matrix*: The process is not longer cancelled, if the interlining matrix is calculated successfully. Additionally, the file names of the output matrices will now be generated correctly. Up to now, the separating '.' was missing. (1047)

#### PrT Assignment

- ▶ *Assignment with ICA*: Now, the convergence of an assignment with ICA is presumed even if the embedded Equilibrium\_Lohse procedure did not reach convergence. Thus the assignment with ICA returns different results. The embedded equilibrium procedure is not concerned. (9648)
- ▶ *ICA, signal-controlled nodes*: For turns without signal control but lane turns, tCur is set = 0 now. Previously, tCur = 100000h was set. (9638)
- ▶ *LUCE procedure*: The gap values in the list PrT assignment quality (Excess Cost, Duality Gap) have been corrected. (Internally, correct values were used for cancelling.) The attributes Relative Gap and Target Function Equilibrium are no more calculated by this procedure. (9644)

#### PuT Assignment

- ▶ *Read timetable-based PuT assignment parameters*: The parameters are read correctly now even if the file was generated in a network version with calendar though it is read in a network version without calendar. (979)
- ▶ *TSys-based assignment*: The program will no longer crash, if the run times on links are extraordinarily long (e.g. 100,000 h). (9639)

11.52-00

Corrections, Bug Fixes and New Features (ID)

2010-12-07

#### Add-In

- ▶ *Calculate Matrix*: Filter conditions are now correctly evaluated. Also, missing target matrix numbers no longer generate an error in multi mode, but are skipped. (9547)

#### COM Interface

- ▶ *IMatrix.Get/SetValuesRaw*: New method for 'Read' and 'Write' matrices from/to a given storage

address. For scripts run in VISUM, this provides efficient access to matrix data. (9489)

- ▶ *IDemandSegment*: Read access to DSeg.ODMatrix of an IDemandSegment object that represents a demand segment without allocated OD matrix now returns a COM error. Previous VISUM versions used to return a corrupt IMatrix object. (9520)

### Data Model

- ▶ *Line blocks*: Stops in depots are checked now after changes to the vehicle combination of a line block. Without this check, corrupt version files could be created. (9555)
- ▶ *Cordon nodes with road toll systems*: Connectors that can be used by at least one private transport system decide whether a node is a cordon node. In this logic, these connectors are regarded as if being links. (9151)
- ▶ Even with external controls, the attribute 'ICA loss time adjustment' can be edited. (9589)

### Dialogs

- ▶ *Line routes window*: Even in the Multi View mode (display of multiple time profiles) data can now be pasted from the clipboard to the profile point column. (9522)
- ▶ *Attribute selection*: The dialog opens much faster now, even with numerous subattribute variants. (9563)
- ▶ Some of the texts used to appear in German though a different language had been selected. This bug could be fixed. (9572)
- ▶ *Color selection with two PC monitors*: The color selection window will always open on the monitor that shows the VISUM main window. (9551)
- ▶ *Line route dialog*: Changing the format for attributes of the moment in time type (from hh:mm:ss to hh:mm) will now change the display. Furthermore, input data is now interpreted correctly after changing the time format to 'minutes'. (9429)
- ▶ *Multi-edit line block items*: This dialog was abolished. (9577)
- ▶ *Signal control dialog*: Now the value "Is reference SC" can be edited for external controls, too. (9599)
- ▶ *Attribute selection dialog*: In the hierarchical view, invalid combinations of aggregation functions and attributes are now longer displayed. So far, the selection could cause a program crash. (9550)

### Timetable Editor

- ▶ *Line block display*: Now, the classified display of user-defined block items is possible. The new graphic parameters 'Conflict' for layover times can be used to highlight layover time faults. (9330)
- ▶ *Line selection dialog*: Changes to the filter conditions (via right-click on the filter icon) now immediately affect the set of displayed lines. (9566)

### Filters

- ▶ *Filter dialogs*: The separate sub-dialog for bracketing definition was discarded. It has been replaced by buttons in the same dialog. Thus it is now possible to define any number of terms. (9538)

### Foreign Formats

- ▶ *Database export, Territory PuT detail list*: Data export does no longer lead to a program crash. (9568)
- ▶ *Connect to personal geo database*: VISUM can be connected to ArcGIS 10 now. (9262)
- ▶ *Shapefile export of line routes*: Line routes whose start and end are located at link stop points on adjacent links in such a way that less than 50% is traversed of either link will no longer terminate the shapefile export. Now, they are included in the export data. (9562)

### Installation

- ▶ *VISSIM Preview*: Under certain conditions, the VISSIM Preview registration used to fail if the User Account Control was active. This bug could be fixed. (945)

### Listings

- ▶ *Delete vehicle journeys*: The program will no longer crash if a service trip list of 'active trips only' is open and the network contains a PuT shortest path search result simultaneously when service trips are deleted. (9592)
- ▶ *Paste from clipboard*: Even if the timetable editor is open, data import from the clipboard is possible. (9595)

## Matrix Editor

- ▶ *Matrix comparison*: The matrix editor now provides a new window for the comparison of two matrices. (5029)
- ▶ *Dynamic aggregation*: As an aggregation function, also the weighted mean is provided now. (5144)
- ▶ *Histogram*: Tooltips and bar labels have been improved. (9573)

## Demand Operations

- ▶ After parallelization, the EVA weighting procedure runs much faster now. But even with a single core, the significant acceleration of the computation becomes obvious. (9576)
- ▶ *Tour-based model - combined trip distribution/mode choice*: The set of parameters has been improved for the procedure. (9138)
- ▶ *Tour-based model and EVA*: Similar to the 4 step demand model, now also the tour-based model and the EVA demand model allow for restrictions to only the active zones or to the active OD pairs. (8928)

## Network Editor

- ▶ *Merge nodes*: The program will no longer crash when an isolated node and another node are merged while a node list that regards the current filter settings is open and the number of the filtered rows is changed by merging these nodes. (9588)
- ▶ *Edit line route shape*: Stop points are served correctly now. Errors used to occur if the same section was re-routed repeatedly. (9564)
- ▶ *Line route dialog*: Using the keys Ctrl-C for copying data in this dialog will no longer cause a program crash if multiple line routes have been marked. (9507)

## PrT Assignment

- ▶ *Dynamic-stochastic assignment*: The condition for the preselection of routes in the dynamic-stochastic assignment did not take effect so far. This bug could be fixed. This might cause different assignment results. (9436)
- ▶ *Stochastic and dynamic-stochastic assignments*: The independence calculation according to Ben-Akiva contained an arithmetic error which could be corrected. This might cause different assignment results. (9447)
- ▶ *TRIBUT*: Either procedure was significantly accelerated. The TRIBUT - Learning procedure has been parallelized. Both procedures take road toll systems into account now. (104)
- ▶ *ICA, All-way stop*: An error during probability adjustment factor calculations caused an incorrect overall result. This bug could be fixed. (9580)
- ▶ *Equilibrium assignment LUCE*: The option 'Explode (main) nodes' was discarded. Thus, the assignment procedure returns deviating results. (9533)
- ▶ *Equilibrium assignment LUCE with option 'Use current assignment result as initial solution'*: Among others, an error concerning cycle handling could be corrected. (9451)
- ▶ *Convert paths: In networks containing main nodes, the Convert paths*: In networks containing main nodes, the conversion of PrT paths into a demand segment used to load the volumes to the turns instead of the main turns, if both cordon links of the main node struck the same node. Now, the volumes are loaded to the main turns in proper style. (9590)
- ▶ *Initialize assignment*: Now even values that have been modified by assignment with ICA are reset. This data include VISUM attributes and UDAs of nodes, main nodes, turns and main turns. (9230)

## PuT Assignment

- ▶ *Perceived journey time*: Optionally, the factor for the number of transfers which is regarded for the PJT calculation can depend on the journey time now for modelling either increasing or decreasing impact regardless of the time required in total. (9479)

## VISUM Files

- ▶ *Route import (RIM) and MPA*: Existing connectors were not found, if 'By shares' was selected for the demand distribution and 'Each single OD pair' was selected for 'Method for connector shares'. This bug could be fixed. (6257)
- ▶ *Items in model transfer files*: After changes to single attributes of line route items or time profile items only the edited items are saved now. Previously, all items including changes due to interdependencies used to be saved completely. (9145)
- ▶ *Open attributes*: If the user-defined attribute X being included in the attributes just read from file was transferred interactively to the newly created UDA Y with the help of the 'New' button, then X

used to be overwritten by mistake. This bug could be fixed. (9536)

- ▶ *ANM export*: With left-hand traffic, crosswalks were created without the INDEX and CHANNELIZEDTURN attributes in some cases. These files could not be read in VISSIM. Furthermore, the CHANNELIZEDTURN attribute value was not correct in some cases. (9567)

### TFlowFuzzy

- ▶ *Flow matrix calculation*: The PuT flow matrix calculation has been accelerated. That is why the level of VISUM 11 is reached now for the same data though numerous additional types of counted data are regarded now. (9559)

11.51-05

Corrections, Bug Fixes and New Features (ID)

2010-11-19

### Data Model

- ▶ *Closing of main turns*: When main turns were closed in the past, allocated lane turns were not removed. This caused VISUM to crash at a later stage, and version files got corrupted. This bug has been fixed. (9521)
- ▶ *Create transport system*: Now the settings of the volume delay functions in PrT are also transferred, when a user creates a transport system and transfers the network attributes of another transport system. (9518)
- ▶ *Signal controllers*: Now a user can also edit the attribute "Is reference SC" for external controls. (9525)
- ▶ *Create transport system*: Some special cases led to a system crash. This bug has been fixed. (9526)

### Dialogs

- ▶ *Filters*: The width of the labels in the column "Attribute" now depends on the name of the set attribute. (6361)
- ▶ *Classification dialog*: The dialog labels now refer to the graphic item that is used. (9415)

### Graphics

- ▶ *Desire line*: If a matrix value has been changed (for example in the OD pair list), now the n largest OD pairs are automatically recalculated, even if no filter for OD pairs is active. (8306)
- ▶ *Display of directed point objects*: If an image is used to display a directed point object (e.g. count location or stop point), the image is now shifted correctly. (9528)
- ▶ *Edit turn volumes*: When calling up the turn volumes dialog, the user can optionally activate the turn volumes layer. (9524)
- ▶ *Signal time-space diagram*: VISUM now has a new view for the visualization of the signal coordination on different nodes. This is a path-time diagram for a link sequence which shows the location of the greentime of the considered signal control. (8800)
- ▶ *Multi-export of turn volumes*: Conflicts with file names will be avoided in the future. (8956)
- ▶ *Traversed stop points*: Now traversed stop points no longer will be drawn in the extended marking only. (9515)
- ▶ *Graphic parameters diagram*: When reading older versions of graphic parameters files, now the field for decimal places is filled correctly again. (9534)
- ▶ *Column chart*: The scaling for negative values now works correctly again. (9478)
- ▶ *Export of turn volumes*: VISUM now provides a feature for the multi-export of turn volumes in the format \*.svg. (8953)

### Matrix Editor

- ▶ *Graphic parameters*: The graphic parameters for a matrix are kept during network editing, even after the Matrix editor is closed. (9510)

### Demand Operations

- ▶ *WISEVA*: If shared mode choice matrices are used for the involved demand strata, up to now by mistake only the result for the demand stratum that was calculated at last was returned. This bug could be fixed. (5773)
- ▶ *Calculate PuT skim matrices*: The statuses of the check boxes are now displayed correctly in the 'Basis' tab of the procedure's parameter dialog. (9513)
- ▶ Procedure 'Eva Distribution/Mode Choice': The procedure has been parallelized and is therefore now significantly faster. (9523)
- ▶ *Procedure parameters VISEM trip distribution/mode choice*: In certain cases the system used to

crash when reading binary files that contained procedure parameters of the named procedure. This bug has been fixed. (9529)

#### Miscellaneous

- ▶ *"Help" menu*: Under certain circumstances the menu entries of the user manuals were grayed out (inactive). This bug has been fixed (936)

#### PuT Assignment

- ▶ *Network volume and statistics, transport system-based PuT assignment*: If the procedure is executed, now the list "PuT assignment statistics" is filled with values. (9456)
- ▶ *Timetable-based PuT assignment*: The procedure no longer freezes when a flow bundle and the filter for OD pairs are active. (9504)

#### VISUM Files

- ▶ *Read network file additionally*: In the past inconsistent data and system crashes could occur when the 'ignore' mode was used when reading a network file additionally with main zone and zone tables with main zone interdependencies. This bug has been fixed. (9527)

11.51-04

Corrections, Bug Fixes and New Features (ID)

2010-11-11

#### Data Model

- ▶ *PrT paths*: The program will no longer crash when a node is deleted with merging of links if it is traversed by a PrT path and the Undo stack is cleared subsequently. (9467)
- ▶ Some of the PrT-specific attributes of basic network object types (the SCJ number per node, for instance) have been shifted from the 'Basis input' attribute group to the 'PrT input' attribute group. (7742)
- ▶ *Signal groups and crosswalks*: If a signal control has been allocated to multiple nodes and if a crosswalk is allocated to a signal group at one of these nodes then the crosswalk allocations of this signal group at other nodes will no longer be discarded. (9483)
- ▶ *Mean wait time at signal control*: Analogously to nodes, the attributes 'Level of Service' and 'Level of Service mean delay' are also provided for signal controls (SCJ) now. (9376)

#### Dialogs

- ▶ *VDF definition*: In the VDF list, the entry in the marked cell appears much clearer now. Furthermore, multi-delete can be applied to VDFs now. (5365)
- ▶ *HAFAS import parameters*: VISUM will no longer crash when the 'Open file' dialog is closed. (9493)
- ▶ *Transport systems dialog*: The program will no longer crash if a transport system is deleted and then a new transport system is created with the name of the deleted T Sys. (9492)

#### Graphics

- ▶ *Desire line*: Desire line links are no more moved aside together with their bars if a distance between bars is specified. Desire line links always connect zone centroids directly. (9519)
- ▶ Visum will no more crash when drawing desire lines, if there is no desire line bar to draw and of the layers bars and desire line links are switched on. (9512)
- ▶ *Redraw after version comparison*: Subsequently to a version comparison update, the network will be redrawn. (9506)

#### Junction Editor

- ▶ *External signal controls*: Changes in the external signal control dialog are immediately visible in VISUM now without closing this dialog window. (9494)

#### Listings

- ▶ *List link types*: The link type list is updated when the set of active links changes (since indirect attributes exist that might be concerned, e.g. MaxActive). (9391)

#### Matrix Editor

- ▶ *Histogram*: VISUM will no longer crash if the classification matrix and the processed matrices do not match. (9497)
- ▶ *Matrix editor - Edit graphic parameters: Classified display of active cells*: Now, the classes are subject to changes even if the option "Classified drawing mode" for "Matrix values" has been

selected. (9408)

### Demand Operations

- ▶ *Mode choice*: Option "Apply to all DStrata" now works even for data rows that have recently been added to the utility table. (9465)

### Network Editor

- ▶ *Spatial selection, checkboxes for PuT lines*: The PuT line selection checkbox settings are now regarded for 'Invert selection' etc. (7207)
- ▶ *Coupling*: It is now possible to couple in sections with different route points but identical time profile items. (856)

### Other Operations

- ▶ *Signal cycle and split optimization*: For each signal control, the optimization is performed separately. If multiple nodes have been allocated to a signal control, all of these nodes are regarded simultaneously. (9296)
- ▶ *Signal cycle and split optimization for external SCJ*: The procedure 'Signal cycle and split optimization' now also supports external VISSIG controls of signal controls (SCJ). (9297)

### PrT Assignment

- ▶ *Blocking back with LUCE or DUE*: Blocking back is now calculated with either assignment procedure if option 'Blocking back calculation also during assignment' has been checked. (9464)

### VISUM Files

- ▶ *Model transfer files*: Now also matrices that were saved to an external file when the demand file was saved are now taken into consideration when a model transfer file is saved. This means, that the matrix data is compared and will be stored with the model transfer file, if applicable. (9469)
- ▶ *Model transfer files*: The geometry is adjusted correctly now if links are deleted via model transfer files. The program will no longer crash in this case. (9498)
- ▶ *Item 1: The filename entered for a COM command is always used as specified, the matching file extension will not be added automatically. Item 2: When a file is opened interactively, the default file extension is added only if the file exists \*with\* this extension only.* (9446)
- ▶ XML files now store attributes of the type length, speed or area with their units. Thus, even after toggling between imperial and metric units the particular data is read correctly from XML files. Furthermore, the attributes SourceBufferSize and DestBufferSize (with IntersectAttributePara) and BBackSpacePerVehUnit (with AssignmentICAPara) are of the 'short length' type now. That is why these values can be returned in [ft] or [m] via COM according to the currently selected unit system. (9417)
- ▶ *Open a model transfer file*: The network scale is no longer set if the scale is the same in both networks, since rounding used to cause differences. (9502)
- ▶ *Matrices in \$O format*: The option 'Sum up all values per (Main) OD pair' set via menu Extras - Options is taken into consideration now. Furthermore, the number of decimal places is correct now after reading or writing an external matrix file in \$O format. (9482)

11.51-03

Corrections, Bug Fixes and New Features (ID)

2010-10-27

### Add-In

- ▶ The frame script for Python calls which has been integrated in VISUM does no longer import VisumPy (in exactly this diction). In this way, some cases of script calls that used to fail could be eliminated. (9407)
- ▶ *Add-in 'Calculate Matrix'*: It is now possible to execute the add-in 'Calculate Matrix', if a filter is defined. (9450)

### Dialogs

- ▶ *Links dialog*: When entering digits into input fields for attributes with units, in the input fields the numerical order is no longer changed. (9445)
- ▶ *Edit stop dialog*: When editing walk times or special wait- und walktimes, input is correctly interpreted according to the currently used option concerning default time format. (9472)
- ▶ *PrT paths dialog*: VISUM will no longer crash if option 'Only flow bundle paths' is selected for the conversion of the paths. (9434)

## Difference Network

- ▶ *Version comparison and link bars:* The network is now redrawn if the version comparison includes the automatic link bar change. (9480)

## PuT Passenger Survey

- ▶ *Read multi-line survey data:* The system no longer crashes, if in multi-line formats no origin zone and no from-stop is specified. (9443)

## Timetable Editor

- ▶ *Delete vehicle journey sections:* The program will no more crash when deleting multiple vehicle journey sections when block display is open and if block items based on the deleted vehicle journey sections exist. (9460)
- ▶ *PuT line selection:* Changes to the basic line selection in the timetable editor will no longer cause a program crash. (9428)
- ▶ *Coupling in timetable editor: Up to now in the following situation erroneously the message "Coupling not possible" was displayed:* If the common section of two vehicle journeys included only two time profile items, and the to-times of the second item were different. This no longer happens. (9427)

## Foreign Formats

- ▶ *DXF export:* It is now possible to export languages with Unicode character sets (especially Russian, Greek, etc.). For languages like Chinese or Japanese, a multibyte conversion would be required which is not possible. (9440)

## Graphics

- ▶ *Preview:* The system no longer crashes in the preview. This happened in the past, if VISUM had to generate too many graphical objects. (9439)
- ▶ *Distance between flow bundle links for display of desired lines:* The distance between the bars for desired lines now regards the desired lines links including the corresponding bars instead of only the links. (9416)

## Listings

- ▶ *PuT path legs:* The list is now updated as soon as time profile attribute data changes, for instance the number of fare points. (9449)

## Matrix Editor

- ▶ *Histogram:* The matrix histogram can now display an y axis and label it with relative shares. (5118)
- ▶ Matrix data is also displayed for more than 32,000 zones. (9365)
- ▶ *Matrix histogram and loading another network:* The program does no longer crash if another network is read from file while the matrix histogram is kept open with a classification matrix. It does no longer prevent the deletion of an external matrix which is being used for the classification. (9461)

## Demand Operations

- ▶ *Create sequence of operations:* When creating a sequence of operations with GoTo-operation (4-step demand model, EVA, and VISEM), in the GoTo-operation the matrix parameter is now set correctly. (9444)
- ▶ *VISEVA:* If shared mode choice matrices are used for the involved demand strata only the result for the demand stratum that was calculated at last used to be returned by mistake. This bug could be fixed. (5773)
- ▶ *Mode choice procedure:* The procedure will no longer cause a program crash if zone attributes are selected for the utility definition. (9477)

## Network Editor

- ▶ *Coupling: Coupling is not possible in the following situation:* Two time profiles have identical items (i.e. all items are on the same stop points or nodes) but the topology of the line route items is not identical. (839)
- ▶ *Line blocks including empty trips:* Empty trips based on systems routes are adapted to changes to length or duration. If a system route is deleted, block items based on this system route are maintained and become empty trips not based on a system route. (9448)

- ▶ *Line filter call*: When the line filter is called from the overview toolbar initially the 'Lines' tab will appear. (9441)
- ▶ *Multi-Edit Links special function 'Polygons'*: The "Only active ones" checkbox setting is now regarded. (9468)

### Other Operations

- ▶ *Combination of matrices and vectors*: If option "Regard only active od pairs" has been checked, the values of passive od pairs remain unchanged now instead of being reset to zero. (9453)

### Miscellaneous

- ▶ *Running script files*: Even if the file extension 'vbs' has not been connected as usual VISUM seeks for the VBScript Script Engine for running those scripts. (9435)

### PuT Assignment

- ▶ *Shortest path search*: By mistake, the shortest path search used to find only a single path leg A-C, though a vehicle journey A-B and another vehicle journey B-C existed on a time profile with the second trip departing exactly when the first one arrived. This could lead to a program crash, for instance during the direct assignment. (9459)

### VISUM Files

- ▶ *Read network additionally*: By mistake, warnings concerning 'Create PT line route' (such as 'Open turn?') were not displayed on screen, automatically NO was confirmed instead. That is why line routes could not be created. This bug could be fixed. (9471)

11.51-02

Corrections, Bug Fixes and New Features (ID)

2010-10-13

### Add-In

- ▶ *Add-in FareSubZone -> POI*: The add-in now terminates correctly. Afterwards other add-ins and scripts can be started. (9403)
- ▶ *Program startup*: If an add-in cannot be found during program startup, an improved error message provides hints how to solve the problem. (9371)
- ▶ Unhandled exceptions in Python-scripts and add-ins are now logged in the error file automatically. (9406)

### COM Interface

- ▶ All messages generated by ScriptMuuli appear in english now. (9431)
- ▶ *Script execution*: VISUM no longer crashes, if a script is started that does not exist. (9409)
- ▶ *ANM export*: Renamed parameter 'writeNetwork' to 'writeRoutes'. The parameters 'writeNetwork' and 'writeMatrices' were interchanged; this has been corrected. (9426)
- ▶ *Running scripts*: The folder ".\" is no longer modified when scripts are run. (9373)
- ▶ *INetPara::SetProjection*: When a projection is set, the syntax is checked and a detailed error message will be returned, if applicable. (9423)

### Data Model

- ▶ *Signalization*: Adjustments were made to the minimum green times of signal groups. This also affects the optimization and NEMA imports. (9421)
- ▶ *Blocks*: If the vehicle combination set of a vehicle journey section is changed, blocks with the property 'Has vehicle exchange' are also changed and get the property 'Has vehicle fault'. (9095)
- ▶ *Multi-edit links TSysSet*: If geometries existed, VISUM sometimes crashed. This bug has been fixed. (9411)

### Dialogs

- ▶ -- (9424)
- ▶ *EVA Trip Generation*: In the Eva trip generation window now all controls are displayed again. (9209)
- ▶ *Save procedure parameters*: When saving procedure parameters in some cases a file name with the extension \*.xml is displayed. In this case also the dialog switches to the file type \*.xml to avoid the creation of a file with the extension '.xml.par'. (9313)

### Difference Network

- ▶ If an attribute with sub-attribute was selected for the version comparison, VISUM used to regard



one of either value instead of the total value for the cross-section logic. (9410)

#### Timetable Editor

- ▶ *Block display*: User-defined block items overtake the correct data from their insert position when inserting them while the time for day change is shifted. (9433)
- ▶ *Block display*: A new search dialog allows to search for vehicle journeys in the gantt diagram. (9050)

#### Junction Editor

- ▶ *Signal timing view*: Greentimes now are depicted correctly in the signal program view. (9438)

#### Matrix Editor

- ▶ *Vector as data source*: Now it is possible to use zone attributes and main zone attributes (i.e. vectors) as data source for matrix operations. (5102)
- ▶ The colors of cells in the matrix editor can now be edited just as flexibly as the color settings in the network graphics parameters. (9383)

#### Network Editor

- ▶ *Edit territory shape*: VISUM used to crash if the territory included an empty polygon before. This bug could be fixed. (9400)
- ▶ *Split link*: Cancelling the split link operation in an assigned network will no longer cause a program crash. (9405)
- ▶ *Edit shape of line routes, separating couplings*: Though the message appeared, the couplings were not discarded when the line route shapes were edited. This bug could be fixed. (9414)
- ▶ *Node geometry*: VISUM no longer crashes, if a user removes crossing lane turns and then undoes this action. (9404)

#### Other Operations

- ▶ *Matrix disaggregation*: The zone attribute ID of the disaggregation weights is now read correctly from files of type \*.par and \*.ver. (9419)

#### Miscellaneous

- ▶ *Script menu*: In the registry, VISUM does no longer change the key names which describe the script menu commands. (9326)

#### PuT Assignment

- ▶ *Tariff model*: The program will no more crash when calculating fares for circle line transitions. (9425)
- ▶ *Shortest path search with reverse correction*: In the rare case when the reverse correction found simultaneous departures on different time profiles, up to now no consistent results were achieved. No the user gets repeatable results. As a consequence, the following results may change: timetable-based assignment (only applies to the shortest path search using reverse correction), passenger surveys, calculation of isochrones, interactive shortest path search. (830)

#### VISUM Files

- ▶ *ANM export*: Routes using blocked links are no longer included. (9422)

#### TFlowFuzzy

- ▶ *Save flow matrix*: The algorithm has been changed. Therefore, the flow matrix calculation calculates further values (vector of assignment sums). When saving, they are written into the flow matrix. (9381)

11.51-01

Corrections, Bug Fixes and New Features (ID)

2010-09-28

#### Dialogs

- ▶ *Dialog Line style parameters*: The program will no more crash when more than one stroke layer is used. Settings will no more be copied when switching from one layer to another. (9398)
- ▶ *Ticket types*: The program will no more crash when creating more than one identical classes by editing the key column directly within the ticket type grid. (9308)

## Demand Operations

- ▶ *Nested Mode Choice*: The program will no more crash during nested mode choice procedure if there are modes without assigned matrices. **(9390)**

## Network Editor

- ▶ *Delete nodes*: If a stop point is located on a node and if, when deleting the node, the procedure is aborted by the user since the resulting adaption of time profiles is negated, the node will no more be deleted. **(9379)**

## Other Operations

- ▶ *Matrix procedures*: The procedures MSA over matrices and combination of matrices and vectors now don't crash when the output matrix does not exist. **(9231)**

## Miscellaneous

- ▶ *Several procedures*: The program will no more crash if protocol or other output data should be written to a file and if the given path does not exist. **(823)**

## VISUM Files

- ▶ *Read / write matrices*: When reading matrices in text format, spaces are ignored before the comment character. Matrices containing such lines with space before '\*' will no more be written. **(9159)**

11.51-00

Corrections, Bug Fixes and New Features (ID)

2010-09-24

## Add-In

- ▶ *Instable behaviour of add-ins and crashes*: The stability of add-ins has been considerably improved. Please also refer to the 'Notes for upgrading users' for necessary modifications if Your scripts/AddIns make use of wxPython for the user interface. **(8936)**
- ▶ *Add-in 'EVA demand model'*: The add-in no longer crashes, if the EVA demand model is incomplete. **(9135)**
- ▶ The add-in 'Simple difference Network' has been removed. This functionality is now provided by the version comparisons introduced with VISUM 11.5. **(9375)**

## COM Interface

- ▶ There is a new COM method for setting the default time format (Extras > Options > Formats). **(7693)**
- ▶ *Transport systems*: There is a new COM method for creating a transport system that corresponds to an existing system. **(9111)**
- ▶ There is a new COM interface to start the extended route choice. **(9219)**

## Data Model

- ▶ *Copy time profile*: If a time profile is copied, now specific transfer walk times and wait times are copied as well. This also applies to coupling in the timetable editor. **(9312)**
- ▶ *System routes*: It is now forbidden to insert the opposite direction of a system route if one of the two terminal stop points is directed. **(9305)**
- ▶ Matrices can now have user-defined attributes. **(9254)**
- ▶ Demand strata can now have user-defined attributes. **(9255)**
- ▶ *Bars and version comparison*: The system no longer crashes or displays bars incorrectly during a version comparison, if a user selects the entry 'Like scaling attribute' in the graphic parameters for the bar fill style. **(9369)**
- ▶ *Forced chainings*: Deleting lines (line routes, time profiles, etc.) in a network with forced chainings now works faster. **(9311)**

## Dialogs

- ▶ *Relations*: The system no longer crashes, if a user expands relations comprising several levels in the attribute selection window. **(9366)**

## Graphical Operations

- ▶ *PuT Flow bundle*: 1. Boarding passengers boarding at the start of a path leg are no longer counted as passing through. 2. Traversed stop points without a time profile item are counted as

passing through - no stop. (9395)

- ▶ *Edit flow bundle*: The system no longer crashes, if a user edits the flow bundle parameters and has the path list open. (9378)

### Installation

- ▶ *Installation via inf*: When installing without Python it will be grayed out in the component selection. (9380)

### Listings

- ▶ Now a demand strata list is provided. (9256)
- ▶ *Lists 'Line blocks' and 'Line block items'*: The course of the line block is marked in the network window similar to PrT or PuT routes. (4300)

### Matrix Editor

- ▶ The new matrix editor now provides a COM interface. It is possible to open or close windows and to set certain parameters. For details see the new COM interface documentation. (5020)
- ▶ *Open version file*: If matrix windows were open during the save process, they will be restored on opening a version file if the corresponding option is set. (5032)

### Other Operations

- ▶ When reading legacy data which contain operations that are no longer available in the current release, VISUM no longer simply stops reading the version file. Instead, an operation of the type 'Invalid operation' is inserted into the procedure as a placeholder. Eventually, this operation must be deleted to make the procedure executable again. (775)
- ▶ *Write skim matrices to file*: The file name will be overtaken from the dialog correctly. (9367)
- ▶ *Operation 'Save version'*: In some cases VISUM stopped the execution of procedures due to supposed errors in the 'Save version' operation, although the operation was successful. This no longer happens. (9374)

### PuT Line Blocking

- ▶ Line blocking (both procedures): Sometimes no solution could be found, and an error message was displayed. This no longer happens. The error correction changes the results because now sometimes a different but equivalent flow solution is found. (9196)

### VISUM Files

- ▶ *Assignment with ICA*: The parameters of the assignment with ICA are now accessible via COM. They have been included into the XML procedure parameter file. (8467)
- ▶ *Blocking back model*: The parameters of the blocking back model that are displayed under Procedures > Functions > PrT functions are now accessible via COM. They have been included into the XML procedure parameter file. (3856)

### TFlowFuzzy

- ▶ *Save flow matrix*: The algorithm has been changed. Therefore, the flow matrix calculation calculates further values (vector of assignment sums). When saving, they are written into the flow matrix. (9381)
- ▶ *Calculate flow matrix*: When calculating the flow matrix, the counted data is also distributed across the individual demand segments. If the global filter is activated, this also happens if there is just one demand segment. (9382)
- ▶ The TFlowFuzzy matrix correction procedure may now use internal VISUM matrices alternatively to matrix files as parameters. (9122)

11.50-07

Corrections, Bug Fixes and New Features (ID)

2010-09-14

### Data Model

- ▶ On certain paths it was possible to assign more than one transport system to one PrT mode. This bug has been fixed. (9263)
- ▶ It is no longer possible to assign a number to a POI which already has been allocated within its category. (9315)

### Dialogs

- ▶ *Version comparison, attribute selection*: Several improvements have been made. (9324)

- ▶ *Edit line route*: The column "<>" no longer displays black boxes. (9322)
- ▶ *Forced chainings dialog and wizard*: In both dialogs, the attribute selection refers to the tables. (9251)
- ▶ *OD demand data dialog and filter dialogs*: In some cases using the key combination Ctrl+C led to a system crash. This bug has been fixed. (9317)
- ▶ *Edit graphic parameters*: When an invalid value for point symbols is entered the program no longer displays the same warning several times. (9184)

#### Filters

- ▶ *Filter dialog*: After removing filter rows and clicking OK in some cases a message was displayed saying that there are faulty parentheses. This message appeared even if the expression contained two rows or less. Now parentheses that are no longer required are removed. The message no longer appears. (9268)

#### Graphics

- ▶ *Multi-export of turn volumes*: During the multi-export of turn volumes the circle size in the export parameters is considered. (9332)

#### Network Editor

- ▶ *Multi-delete nodes*: The program will no more crash when multi-deleting nodes if crosswalks exist in the network and UNDO stack is not active. (9316)
- ▶ *Edit shape of line route*: If the shapes of line routes are edited and as a consequence couplings are separated, an entry is written into the file trace.txt. (8940)

#### PuT Assignment

- ▶ *Timetable-based assignment*: For simple fare models the timetable-based assignment now runs as fast as it did in VISUM 11.0 again. (9314)
- ▶ *Paths and MPA*: If paths are calculated using MPA and saved as \*.CON file, during the import the distribution is carried out according to connector shares. (490)

11.50-06

Corrections, Bug Fixes and New Features (ID)

2010-09-07

#### Data Model

- ▶ *Coupling*: The coupling sections are now correctly adjusted, if a coupled section is shortened at its start. (9291)

#### Dialogs

- ▶ *Attribute selection*: The program will no longer crash when a user tries to extend the sum branch of a relation. (This bug only occurred only after the installation of the last service pack.) (9304)
- ▶ *Save attribute file*: The dialog title clearly states whether data will be written to file or database. (9058)
- ▶ *Line blocking*: Save option "Forced block check" in registry. (9118)

#### Foreign Formats

- ▶ *GIS objects*: The access to external attributes in lists is now possible again. (9310)

#### Network Editor

- ▶ *Quick view window*: Marked areas in the quick view window are automatically deactivated when the user selects a different network object. In the past, marked areas remained active which sometimes led to crashes. (9292)
- ▶ *Quick view window*: The advanced input options in the quick view window are working again. (9290)
- ▶ *GIS objects*: The context menu option "Create UDA" was grayed out (deactivated) as no user-defined attributes for GIS objects exist. (9303)

#### PuT Line Blocking

- ▶ *Block check*: If a forced chaining exists and a user checks whether an empty trip can be inserted layover times are no longer considered. (9286)
- ▶ *Block check*: If long empty trips or extensive user-defined block checks exist, the block check no longer reports errors due to unauthorized layover times, and the forced block check no longer reports errors due to unauthorized block days. (9282)

- ▶ Line blocking (both procedures): Blockings are now generated correctly, if forced chainings enforce a shorter layover time and simultaneously an empty trip is required. (9273)

11.50-05

Corrections, Bug Fixes and New Features (ID)

2010-09-02

### COM Interface

- ▶ *INode / IMainNode*: The COM method UpdateImpedance optionally writes a report, depending on procedure parameters. (9244)

### Data Model

- ▶ *Remove transport systems*: When removing a transport system blocks using it as empty trip transport system are removed as well. (9278)
- ▶ *System routes*: If a system route uses a turn, this turn must not be blocked for the transport system of this system route. (9235)
- ▶ *Fares*: The number of traversed fare zones is calculated correctly in complicated networks, too. (9242)
- ▶ *Signal controllers*: There are no rounding errors anymore when signalgroup-based controllers are converted to stage-based controllers. Since this conversion is used implicitly in signal cycle and split optimization, this may lead to minor differences in the results. (9243)

### Dialogs

- ▶ *Graphic parameters for diagrams*: Column diagrams are drawn correctly if there is more than one column, one of the attribute values is 0, and the option "hide if (absolute) value <=" is disabled. (2637)
- ▶ *Print settings*: The menu item "Set print page..." now works even in case a list view is active. Moreover, the menu item appears in the "Layout" menu as well now. (9175)
- ▶ *Attribute selection*: The program will no longer crash if one tries to add an alias pointing to an attribute with sub-attribute that does not exist any more in the attribute selection dialog. (9270)
- ▶ *PuT fares*: Multiple minor grid bugs were fixed. (9241)

### Timetable Editor

- ▶ *Block display*: The program will no longer crash if a block is inserted while the tree showing all blocks is open and if the insertion is canceled within the dialog. (9271)
- ▶ *Block display*: When creating a user-defined block item, the blocking day will always be determined correctly from the insert position. (9272)

### Foreign Formats

- ▶ *SVG export for Inkscape*: Point symbols are scaled correctly. (8845)
- ▶ *Import shapefile*: Point objects do not lose their coordinates when importing as stops. (9229)

### Graphics

- ▶ *Desire lines*: Desire line links are drawn if the bar layer is switched off. (8751)
- ▶ *Turn volume parameters*: When editing graphic parameters of text blocks in Turns->Turn volumes->Text format->Standard, the new settings can optionally be applied to all active turn volumes. (9173)
- ▶ *Draw link bars*: Link bar labels are no longer moved by the link's width if the bar layer is switched off. (9252)
- ▶ *SVG as background in VISUM*: Dashed lines are displayed correctly. (6944)
- ▶ The network no longer disappears when pasting empty list contents. (9261)
- ▶ *Version comparison*: Bars of percental difference attributes are displayed correctly now. (9283)
- ▶ Background JPEG images larger than 500x500 pixels were always exported in black and white when printing to a PDF. (9257)
- ▶ *Turn volumes*: Bars on straight turns are displayed correctly now. (9233)

### Graphical Operations

- ▶ *Read network file additively and shortest path search*: If a PrT shortest path search has been executed in a network, when reading a network file additively the shortest path search will no longer be executed after each line containing a turn, but only once when reading the file is finished. This speeds up reading network files in this case. (4147)

## Listings

- ▶ *PuT partial routes*: Indirect attributes of ticket types are updated correctly on network changes now. (9246)

## Matrix Editor

- ▶ *Matrix histogram*: VISUM no longer crashes if all intervals are deleted in a histogram of multiple matrices. (9259)
- ▶ *Matrix histogram*: All toolbar icons of the matrix editor now work correctly if both matrix editor and matrix histogram are open. (9258)
- ▶ *Layout*: The matrix editor supports saving and loading layout files from now on. (5031)
- ▶ *Graphic parameters*: Graphic parameters for the matrix editor are available now. They can be used to produce a classified depiction of grid cells and can be stored in a parameters file. (5168)
- ▶ *Histogram*: The program will no longer crash when opening a version file or creating a new network while a matrix histogram is open. (9265)

## Miscellaneous

- ▶ *Context sensitive online help (fare systems)*: The context sensitive online help now works for all the pages of the fare system dialog. (9279)
- ▶ *Copy & paste in matrix editor*: Copy & paste from matrix editor into excel maintains newlines on chinese operating systems as well. (9177)

## PuT Line Blocking

- ▶ *Block check*: The program will no longer freeze (endless loop) while executing the block check procedure if, by inserting empty trip items, the standard sort order of block items is changed. (9119)
- ▶ *Block Check*: Layover times before the first and behind the last service trip block item are maintained when checking open blocks. (9216)
- ▶ *Blocks*: The program will no longer crash if changes to the pre or post preparation times leads to the deletion of the corresponding block item. (9250)

## PrT Assignment

- ▶ *Equilibrium-Lohse and stochastic assignment*: The range of the termination parameter has been enlarged s.t. a factor of 0 can be used instead of 0.01. (9253)

## PuT Assignment

- ▶ *Connection import*: VISUM no longer crashes if reading network volumes fails. (9239)

## VISUM Files

- ▶ *Attribute files*: The program will no longer crash when reading an attribute file containing a column named as an alias existing in the current network and pointing to an attribute with sub-attribute. (9269)

11.50-04

Corrections, Bug Fixes and New Features (ID)

2010-08-23

## Add-In

- ▶ *Add-Ins*: The window header now always matches the title of the document. (9148)

## COM Interface

- ▶ *Shorten a line route*: This functionality will no longer freeze. (9204)

## Dialogs

- ▶ *Set up and edit classification*: Setting up the class limits now works correctly. (9225)
- ▶ *Save network*: The table and attribute selection is no longer reset if one of the options is checked: "Save only active network objects", "Hide empty tables", "Hide attributes with default values". (8822)
- ▶ *Edit line route*: Arrival and departure times are editable now. (7718)
- ▶ *Line route dialog*: The arrival and departure data is correct now, even if an additional stop event with dwell time > 0 was added above a reference point. (9211)

## Timetable Editor

- ▶ *Block display*: The valid days label uses "not valid" for days outside calendar now, when searching for a matching valid days object in the network (9195)

## Filters

- ▶ *Filter dialog*: In certain cases, VISUM used to crash if the first data row in the filter conditions grid was deleted. This bug could be fixed. (9223)

## Graphics

- ▶ *Set up and edit classification*: Automatic class limits can now also be calculated with natural breaks. (8868)

## Matrix Editor

- ▶ *Arithmetic operations*: The buttons for rounding and linear combination of matrices and vectors now work correctly. (9218)
- ▶ *Old matrix editor*: (1) Upon closing a matrix the reference in the list of open matrices is removed. (2) Code files are now displayed correctly. (9187)

## Demand Operations

- ▶ *Demand procedures*: The procedures can now be applied independently of existing add-ons. (9220)

## Network Editor

- ▶ *Version comparisons*: A suffix is now added to user defined attributes (same as for other attributes). (9208)

## PrT Assignment

- ▶ *LUCE using an existing assignment as initial solution*: The procedure will no longer produce instable results which used to occur in certain cases. (9171)

## VISUM Files

- ▶ *Open / Save procedure parameters*: An entry is written in Trace.txt when a parameter file (.xml or .par) is opened / saved successfully. (9228)
- ▶ *Project directories files*: pfd files can now also be read when they contain additional whitespace. (9217)

11.50-03

Corrections, Bug Fixes and New Features (ID)

2010-08-16

## COM Interface

- ▶ *SetMultiAttValues*: This method checks the validity of the index ([x,0] in the first place of the array). (9201)
- ▶ *Log files*: The COM methods WriteToTrace and WriteToError add a line break to complete the generated entry. (9164)

## Data Model

- ▶ *Matrix cache*: In certain cases, defragmentation of the matrix swap file caused a program crash. This bug could be fixed. (9181)
- ▶ *Edit line route shape*: The program no longer crashes when the line route is lengthened. (782)
- ▶ *Line blocks*: The program will no longer freeze (endless loop), if the pre and post preparation times of vehicle journey sections are reduced, though a shorter time had been set manually for the the layover block items in the line blocks before. (9186)

## Dialogs

- ▶ *Column Charts*: Attributes with an ID consisting of one character only may be used as label for x-axis (used e.g. for russian short name of link attribute 'NO'). (9169)
- ▶ The program will no longer freeze (endless loop) if a warning or an error message appears in the process window of a separate thread while the procedure is running. (9182)
- ▶ *Shapefile export*: Unlike the regular mode, the OK button is initially selected in the attribute selection dialog and the Cancel button aborts the operation. (8662)

## Difference Network

- ▶ *Network merge mode*: Merging the networks works now while a list of user-defined paths is open. (9190)

## PuT Passenger Survey

- ▶ Read passenger onboard data from file (either data format): The program will no longer crash, if the target network is empty. (777)

## Timetable Editor

- ▶ The Screenshot functionality now works in the timetable editor, too. (9194)
- ▶ *Set PuT line selection via COM*: Setting the line selection for the timetable editor via COM does not produce invalid sequences of stops or stop points. (9183)

## Filters

- ▶ *Group filter*: The filter state is now updated when an object is created. (779)

## Graphical Operations

- ▶ *Flow bundle*: The flow bundle is recalculated again after changes to the OD pair filter. (9199)

## Listings

- ▶ *Goodness of PrT assignment with ICA list*: In certain cases, the program used to crash when assignment results were discarded while the list was open. This bug could be fixed. (9168)

## Matrix Editor

- ▶ Via the filter icon in the matrix editor toolbar, filtering can globally be switched on or off. (9178)
- ▶ *Multi-matrix processing*: Operations on matrices, which themselves are the second operand for other matrices, are performed at last. In this way, the operation regards the original value of the operand. (8584)
- ▶ *Matrix histogram*: Interval files in old format (extension .cod) can now be read. (9166)

## Network Editor

- ▶ *Edit zone shape*: The program will no longer freeze (endless loop), if the user clicks a polygon point that belongs to two adjacent polygons while holding down the CTRL and SHIFT keys. (9144)
- ▶ When aggregating lines, all line routes that can be aggregated are now actually aggregated in one procedure run – independent of the order of the IDs. (7487)
- ▶ Like in web browsers, the keyboard can be used now to navigate in the view history, i.e. the key combinations Alt - Arrow left and Alt - Arrow right can be applied. (8451)

## PuT Operating Indicators

- ▶ Saving version data to file works correctly even if the network includes PuT operating indicators for Territory x [...] x Vehicle combination, though some entries do not have a vehicle combination. (9191)

## Other Operations

- ▶ All procedures will warn interactively if an error occurs. Warnings will also be logged in trace- and error-files. (9153)
- ▶ The procedure Linear combination of matrices and vectors has been implemented in the matrix editor and also in the matrix browser, UNDO can be applied in either case. Target matrices can be among the source matrices. (9170)

## Miscellaneous

- ▶ *Open version via double-click*: When a version file is opened by double-click in the explorer, the file name spelling (upper and lower case) is retained. (9176)
- ▶ Reduced memory fragmentation after assignment calculations. (8050)

## PrT Assignment

- ▶ *PrT assignment with ICA*: The assignment is now considered to have reached convergence only if the internal assignment (Equilibrium\_Lohse or Equilibrium assignment) has reached convergence, too, and was not terminated because the maximum number of iterations had been reached. (9172)
- ▶ Deleting PrT assignment results for multiple demand segments has been accelerated. (9188)



- ▶ *LUCE with warm start*: The procedure returns sufficient volumes now even if traversed network objects were blocked in the initial solution. Results are not fully stable numerically, but this issue will be addressed shortly. (9197)

#### PuT Assignment

- ▶ *Connection import*: Even if an error occurred, the process window is closed (for example, if the file to be imported does not exist). (9167)
- ▶ *Connection import*: VISUM now rejects path legs using time profiles backwards. (9206)

11.50-02

Corrections, Bug Fixes and New Features (ID)

2010-08-04

#### Add-In

- ▶ *Balance matrix*: The user is now notified if the matrix contains invalid values. (9087)
- ▶ *Add-In 'EVA Auswertung'*: No crash if EVA-Demandmodel is incomplete (9135)

#### COM Interface

- ▶ Interactive deletion of current network is prohibited if COM references to network objects exist. (9081)

#### Data Model

- ▶ The growth of the matrix swap file is decreased much. (8839)
- ▶ *Emission calculation according to HBEFA*: If a fleet composition has no subsegment with a positive weight, this results in a uniform distribution of all segments of the selected categories in the calculation and in the linear combination of fleet compositions. (8988)
- ▶ *Lines*: The transport system of a line can be changed at any time. Where required, network objects to be opened (links, turns, stop points) will be adjusted. (6771)

#### Dialogs

- ▶ Dialog "Comparison of stop and run times" does not crash any more if only active objects are displayed and filtered by system routes (9157)
- ▶ *File names*: When using the 'Open' or 'Save as' command, the default extension of the respective file type is added to file names which do not have a valid extension yet. If, in the project directories, a '\*' has been entered for the file type, any extension is permitted. In this case, no additional extension is added. (6082)
- ▶ *Forced chainings dialogs*: In the Forced chainings dialog and in the wizard to define new forced chainings, the column selection for the table can now be set. The columns with calculated departure, arrival and valid days are always displayed. (9075)
- ▶ *Edit stop dialog*: The specific walk and wait times between time profiles are displayed correctly. (9131)
- ▶ *Tooltips*: Tooltips with umlauts are translated correctly on operating systems with a 'foreign' codepage. (9099)
- ▶ *Blocking back model*: The input field for the average space required per car unit now also handles imperial units correctly and full stop or comma as decimal separators. (9107)

#### Timetable Editor

- ▶ *Line block view*: The printout is positioned better than before. (9092)
- ▶ Context menu entries in the timetable editor which refer to marked vehicle journeys are grayed out, if nothing has been marked. Context menu entries that require further user input are identified by "...", as usual. (9121)
- ▶ *Parameter dialog for line block display*: The combobox of block versions for the determination of unbound actions is sorted numerically by the block version number. Furthermore, the previous block version selection can be restored more often than before when reopening the dialog. (9078)
- ▶ *Wizard to define forced chainings*: A progress dialog is displayed when determining the possible targets. The determination can be cancelled. In this case, any already determined targets will be displayed. (9076)

#### Filters

- ▶ *Filter on vehicle journey items*: vehicle journey items are passive, if their vehicle journey is passive. This could be wrong if the journey was passive, because of a filter on vehicle journey sections (8697)

## Foreign Formats

- ▶ *Shapefiles*: Z- coordinates of nodes are now exported/imported correctly. (9097)
- ▶ PolygonM+Z behave just like Polygon. The z-coordinates/the measured value cannot be used in EdgePoint and are thus discarded. (4362)

## Graphics

- ▶ *Legend*: When scaling path bars, the legend now also displays the specified attribute. (9120)
- ▶ The initial graphic parameters classification is calculated from existing classes (9126)
- ▶ Text labels of print frames can have multiple lines and are wrapped automatically (7179)
- ▶ *Editing classifications*: If you edit an existing classification, the current color gradients are transferred to the dialog as far as possible. (8870)
- ▶ *Lists*: The correct font size is set when printing (so far: the font size of the header). (9091)
- ▶ *Line bars*: the aggregate function "weighted mean" also regards the first attribute value now (9141)

## Junction Editor

- ▶ If you set the display language to Russian, the labels of the radio buttons ('legs', 'lanes') and check boxes ('Major flow manually') are now displayed in full. (9110)

## Matrix Editor

- ▶ *Integrated matrix editor*: Row and column sums are now available. (9158)
- ▶ Standalone matrix editor ("Muuli"): Changing options and saving of changed matrices works again. Also creating and editing a code file works again. (9163)
- ▶ *External matrices*: The initialization of external matrices no longer leads to a crash. (9105)

## Demand Operations

- ▶ *EVA mode choice*: If balancing is not possible in the network yet demanded in the procedure parameters, this is changed when opening the parameters dialog. A message is issued concerning the modification in the procedure parameters. (9045)
- ▶ *Estimating gravitation parameters*: You can now also add an interval via COM. Furthermore, a characteristic of the enum ProtocolSaveTypeT has been changed once more. (9103)
- ▶ *VISEM combined*: The transformation of the utility matrix is calculated after LogSums now (was calculated too early) (9137)
- ▶ *Procedure parameters for demand distribution dialog*: On the 'Function graph' tab, the parameters estimated with the Kalibri procedure are displayed, if the respective 'Apply estimated parameters' option has been set. (9100)
- ▶ *Estimating gravitation parameters and TFlowFuzzy*: It is possible to read interval-Att-files for the procedures (9101)

## Network Editor

- ▶ *Demand segments*: VISUM no longer crashes when discarding line costing results, for example due to the creation or deletion of a new demand segment. (9124)
- ▶ *Transport system*: When inserting a transport system, another transport system can be specified. From this transport system, the trafficability of the network and other transport system-dependent attributes are copied. (9047)

## Other Operations

- ▶ All procedures will warn interactively if an error occurs. Warnings will also be logged in trace- and error-files. (9153)

## Miscellaneous

- ▶ VISUM now starts even if UAC is activated, user has no admin permission and a scriptmenu entry for 'Computer' exists. (9116)
- ▶ VISUM respects HIGH DPI (120 DPI, 144DPI) (8187)
- ▶ Procedure "Save Version" occasionally generated a confusing warning if the filepath wasn't valid. (9132)

## PuT Line Blocking

- ▶ *Line blocking with vehicle interchange*: The procedure can generate blocks with predetermined secondary properties (long/short blocks, distribution of the layover times), just like the procedure without a vehicle interchange. (7752)

- ▶ *Line blocking with vehicle interchange*: The procedure converges further than before, so that better solutions are found. In addition, the procedure has been accelerated. **(9112)**

#### **PrT Assignment**

- ▶ The Tribut learning procedure has been accelerated considerably. **(9114)**
- ▶ *LUCE assignment procedure*: The procedure can now build on an existing result from previous runs. **(8941)**

#### **PuT Assignment**

- ▶ *Connection files*: The export and import of connection files has been parallelized. **(7352)**
- ▶ *Headway-based assignment*: In case of lines operating in parallel, only the last stop of multiple equivalent stops is used for transfers. **(9129)**

#### **VISUM Files**

- ▶ Conflict avoidance works correctly if signal groups are read additionally from a network file **(8075)**
- ▶ *Network writing*: If "only active" is selected, only couple sections are written which have active couple section items **(9090)**
- ▶ *Additive network reading*: The 'Cancel' option as conflict handling for line route or time profile items led to a termination of the additive network reading. So far, the effected items were overwritten in this case. **(765)**
- ▶ *Model transfer file*: The model transfer file now contains less central types from the network file and the demand file. **(8847)**
- ▶ *Saving a network*: In the "Save only active network objects" mode, the program only exports time profile transfer times that belong to active time profiles. **(9142)**

#### **TFlowFuzzy**

- ▶ Correct shares of the given matrix are now calculated, when selecting the 'Shares due to the matrix' option. **(9143)**