PTV Visum 13 Release Notes

PTV **GROUP**

the mind of movement

http://vision-traffic.ptvgroup.com/en/support_visum

Last modified: 2014-01-22

13.00-11 [84343]	2014-01-22

⊕ New Features and Changes

Foreign Formats:

⊕ OpenStreetMap import: Roundabouts (junction=roundabout) now only have one cycling direction, even if they are not explicitly marked as one-way. **(13407)**

Schematic line diagram:

⊕ Line width of text frames: In the schematic line diagram, the line width of text frames was not scaled (in contrast to other line widths, e.g. for edges). Consequently, text frame lines appeared very wide, when you used the Zoom out function. This has been fixed. Now the line width for text frames is also scaled. **(13358)**

✓ Fixed Bugs

ANM:

✓ ANM import: Messages generated during the ANM import included a reference to the wrong type of network object. This error has been fixed. Due to technical reasons a reference to a type is not shown, but the text of the message contains the type of the network object and the key of the object. **(13310)**

COM Interface:

✓ OSM background maps in STD.GPA: If you had activated an OSM background map in the default graphic parameters file STD.GPA and then started a Visum instance via the COM interface, the corresponding license information dialog was displayed. This meant that Visum could no longer be started via the COM interface without user interaction required. This error has been fixed. **(13400)**

✓ Setting a bracketed filter condition: Setting a hierarchical filter (stops, line hierarchy) using a bracketed condition (IGroupElementFilter.AddBracketedCondition) did not work via the COM interface. This error has been fixed. The AddBracketedCondition methods for other filters worked fine. **(13405)**

Data Model:

✓ Strict link types: The program no longer crashes when you set the attribute 'Strict' to 'true' for several link types in a row. **(13380)**

✓ Time-varying attributes: If a network contained a calendar, the validity of a time-varying attribute, specified by a valid day and the attribute 'Periodical,' was not listed correctly. This error has been fixed. **(13368)**

Dialogs:

✓ Bar labeling: If the 'Multiplication factor' for bar labeling was set to a value < 0,0005, the value was then rounded to 0 for display in a dialog and set to 0 when the dialog was closed. To avoid this, the number of decimal places shown has been increased to 6. **(13387)**

✓ Dialog 'Edit time-varying attributes': When you moved an entry using the arrow up or arrow down buttons, the arrow buttons became inactive. Only when you highlighted the entry again, were you able to move it. This error has been fixed. **(13423)**

✓ Find pair of zones (in path lists): The tab sequence of control elements in the dialog 'Find pair of zones' (in path lists) has been improved. It now allows you to use the keyboard to access this dialog as required. **(13365)**

Foreign Formats:

✓ VDV452 export: When link stop points of a line route only occurred as intermediate points (i.e. not as a route point), in VDV452 data, the stop point number was used as a key for the 'location'. These keys could get in conflict with keys generated from node numbers. This error has been fixed by currently omitting the location information. **(13427)**

Graphical procedures:

- PuT shortest path search: If for a network, there was a calendar with more than day, the shortest path search did not work properly when you changed the start day via the user interface. In addition, during a backwards search (i.e. when the arrival time was specified), the extension was not interpreted as a pre-extension. Both errors have been fixed. **(13410)**

- Turn volumes in the Network editor: When in the Network editor, in the 'Turn volumes' mode, you selected a node and clicked outside the turn volume radius, the latter was set to 0. This error has been fixed. **(13300)**

Graphics:

- Legend: For bar scale display, the program did not consider the 'Multiplication factor' for bar labeling. This error has been fixed. **(13386)**

- Print area and turn volumes: If you switched to the Turn volumes mode and opened the 'Print area' dialog, at first a frame indicating the print range was displayed. When you used the Zoom function, however, the frame disappeared. This error has been fixed. **(13349)**

Junction Editor:

- Using leg templates: When you applied a geometry template to a node or a leg template to a leg, the attributes of the lane template (width, length, number of vehicles) were not adopted. This error has been fixed. **(13393)**

- Vissim node preview: The program no longer crashes when you open the Vissim node preview for a node with external signal control. **(13389)**

Listings:

- Search dialog in lists: The program no longer crashes when in a list, you open a search dialog and press Ctrl + a. **(13432)**

- Synchronization of the highlighting: When you clicked in a synchronized list that previously was not active, the highlighting was not immediately synchronized, but only after a second click (e.g. within the same list row). This error has been fixed. **(13406)**

Main window:

- Network is considered changed: Directly after loading a version file, the program considered the network as changed (asterisk in name shown in title bar). Accordingly, a warning was issued when you wanted to delete the network. This error has been fixed. **(13426)**

- Execute procedure via toolbar: When a window was active that did not belong to the same tab group as the procedure sequence opened, and on the 'Functions' toolbar, you clicked the 'Carry out all procedures activated' button, the procedure sequence window was brought to the foreground, but none of the procedures were carried out. This error has been fixed. **(13331)**

Miscellaneous:

- Reg files during program start: You previously needed administrator rights to load *.reg files during program start. Now, you can do so with regular user rights. **(13431)**

- Scrolling in the Message window: When in the Message window you had highlighted a row, you could only scroll the visible area until reaching your highlighted row (this was the last visible row). In this case, new messages were hidden. This error has been fixed, i.e. the program now scrolls down further to show every new message. **(13183)**

Network Editor:

- Create line route for reverse direction: If in a time profile, for an intermediate stop, only boarding or alighting is allowed, either boarding or alighting is set for the line route in the reverse direction, i.e. if only boarding is allowed for one direction, then alighting is set at the same stop for the reverse direction and vice versa. **(13361)**

- Editing the shape of PrT paths: When editing the shape of PrT paths, you could right-click an intermediate node to select a stop point or new destination - which does not make sense for PrT paths and often led to program crashes. This error has been fixed by no longer allowing for the selection of stop points in this case. **(13401)**

Other procedures:

- ✅ Linear combination of matrices and vectors: When you deleted a matrix with a reference within the procedure 'Linear combination of matrices and vectors', this reference was not updated. When the procedure was then executed, this could cause it to crash. This error has been fixed. **(13360)**

- ✅ Territory indicators: When calculating the indicator 'Network length (undirected), the program did not account for the link proportion lying in the territory. This error has been fixed. **(13421)**

Passenger survey:

- ✅ Specific walk times: The program no longer crashes when a plausbility check is carried out for a PuT path, with at least two path legs in the preliminary or final part and a) at the stop of transition between these path legs, specific walk times are defined and b) a previously verfiied path leg is found implausible. **(13373)**

PrT Assignment:

- ✅ Balancing equi-impedance meshes in LUCE: The program no longer crashes while balancing equi-impedance meshes during the PrT assignment procedure LUCE. **(13388)**

- ✅ Paths or path volumes and blocking back calculation: If blocking back calculation is activated, changes to paths or path volumes of an assignment now each time trigger a blocking back calculation. **(13329)**

PuT Line Blocking:

- ✅ Endless loop during line blocking: In certain cases, an endless loop could occur during line blocking (with and without vehicle interchange). This error has been fixed. **(13371)**

13.00-10 [83867]	2013-12-17

➕ **New Features and Changes**

ANM:

- ➕ Projections in ANM: When exporting networks with projections using the ANM export the projection is written to the ANM file. When importing the ANM file into other programs (e.g. Vissim) the geographical position of the network is known and can be combined with the display of background images.
  The .anm files written with Vistro now require Vissim 5.40-11 or higher and Vissim 6.00-09, respectively. **(11698)**

Foreign Formats, Add-In:

- ➕ PuT Walk times in various importers: Often there are no information about walk times for transport systems of PuTWalk on links when importing networks from different sources. By default, walk times are set assuming a walk speed of 4km/h for the following data sources:
  Import VDV452
  Import OpenStreetMap
  Import SATURN
  Import TransCAD Network (Add-In)
  Import Cube Network (Add-In)
  Import Transit Supply (Add-In)
  Import Google Transit Feed (Add-In) **(12613)**

Foreign Formats:

- ➕ Improved configurations for the OSM import: The configurations provided with the Visum installation for the OSM import have been improved regarding:
  - simpler set-up of configurations
  - better treatment of trams
  - import of more POI classes
  - import of more attributes
  - additional documentation **(13136)**

Installation:

- ➕ Add-on PTV Vistro Attributes: The add-on PTV Vistro Attributes can now be switched on and off. With this add-on attributes for the data exchange with PTV Vistro can be made visible. By default, after the installation of PTV Visum the add-on is switched off. **(13319)**

- ➕ PTV Visum manual: This service pack contains an updated version of the manual. The PTV Visum manual is available as online help and PDF document. The previously two separate manuals (Fundamentals and User manual) are now combined into one single PDF document. **(13327)**

Listings:

➕ OD pair list: The default layouts for the lists of OD pairs and main OD pairs now include the matrix values of the first matrix only. In big models with many matrices the list opens now much faster, if no user-defined list layout is used. **(13085)**

Miscellaneous:

➕ Registry entries for script menu: Visum no longer writes data to the registry under the key HKEY_LOCAL_MACHINE, which is valid for all users of the computer. In particular, in the script menu, entries can no longer be assigned the validity scope 'Computer'. **(13254)**

✅ Fixed Bugs

Add-Ins:

✅ Add-Ins 'Reporting PrT Counts' and 'Reporting PuT Counts': The program no longer crashes if the option 'Go to operation: Save new report in each loop' is activated and the button 'Preview report' is used. **(13336)**

Data Model:

✅ Formula matrices, combination of matrices and vectors: The function 'Reciprocal' did not regard the settings under user preferences for division by zero. This error has been fixed. **(13307)**

✅ Signal programs of Vissig controls: When reading data it could occur that the signal program number was set to 0 for Vissig controls, also when a program with this number did not exist. This error has been fixed. **(13308)**

✅ Undo changing transport systems: When you changed the transport system set of a link type via the list or COM interface, this change could not be undone. This error has been fixed. **(13261)**

Dialogs:

✅ Analysis time intervals: The program no longer crashes when values are pasted to the grid of analysis time intervals in the dialog under 'General procedure settings'. **(13288)**

✅ Dialog 'Edit link': The values of t0 and tCur are not updated if the type of the link is changed when Tab 'PrT TSys' is open. This error has been fixed. **(13255)**

✅ Messages related to the scale: Under certain circumstances some messages without cause were shown in the graphic parameter dialog for point objects related to an invalid scale. This error has been fixed. **(13314)**

✅ Set radius for turn volumes: The radius for turn volumes of a single node could not be set because it was not possible to exit the corresponding dialog with OK. This error has been fixed. **(13298)**

Foreign formats:

✅ HAFAS import of destination coaches: If there are several options of pulling trains for a coach and depending on the valid day the coach is coupled sometimes before midnight and sometimes after midnight it could occur that the arrival time of the corresponding vehicle journey was bigger than the departure time or the coach was coupled with the wrong time profile. This error has been fixed. **(3251)**

Graphics:

✅ Background map and shapefiles: After the import of a shapefile with a valid projection it was not possible to activate the background map. This error has been fixed. **(13320)**

Installation:

✅ Silent installation: If the silent installation has been used to install updates a message was displayed when the Codemeter-Runtime had to be updated and a network dongle is used. This bug has been fixed. **(13309)**

Junction Editor:

✅ Display of nodes with projections: So far the use of a projection did not have any effect on the display of nodes and main nodes in the junction editor. In cases where the network scale strongly deviated from the actual scale of the projection at the position of the node, especially the display of main nodes was distorted. This error has been fixed, i.e. the projection is now used in the junction editor. **(13019)**

✅ RBCs: Any temporary files that are created when opening the RBC-Editor are now stored in the %TEMP% directory of the user. **(12136)**

Listings:

- OD pair list restored: The program no longer chrashes if a version file with an open OD pair list is opened. **(13289)**

Main Window:

- Search in user-defined attributes: The search in user-defined attributes of POI or GIS categories was not successful even if the attribute values as defined in the search exist. This error has been fixed. **(13341)**

Network Editor:

- PrT paths and initialization of assignment: The program no longer crashes when the dialog 'Paths' is open and one of the assignment path in this dialog is marked and then the PrT assignment is initialized. **(13328)**

Other procedures:

- Intersect line routes / system routes / PrT paths with surfaces: When intersecting line route / system routes / PrT paths with polygons it could occur that the corresponding attribute value of the surface was not accepted. This error has been fixed. **(13296)**

PrT assignment:

- In the computation of PrT skim matrices, matrix row and column sums are no longer numerically inaccurate **(13348)**

- Assignment with demand from one origin zone only: For PrT assignments (Equilibrium or TRIBUT-Equilibrium) with demand from one origin zone only for a demand segment, it can occur that the resulting paths are wrong. **(13347)**

- Network check for Viability for ICA: The network check for viability for ICA now gives a message if a signalized node with a channelized control does not have a signal group defined. **(13272)**

PuT Assignment:

- Multiple assignments: When a PuT assignment with multiple demand segments was executed followed by another PuT assignment of one of the demand segments with a OD pair filter active the program crashed when multiple cores were used. This error has been fixed. **(13273)**

Schematic line diagram:

- Re-routing of line routes: The program sometimes crashed when the schematic line diagram has been adopted to a re-routed line route. This error has been fixed. **(13301)**

VISUM Files:

- Matrix files (all formats except binary): If a matrix file does not contain data, the value of the relation from zone 1 to zone 1 was set to 0. If this OD pair did not exist a meaningless error message was shown. This error has been fixed. **(13244)**

Breaking Changes

PrT assignment:

- In the computation of PrT skim matrices, numerical inaccuracies in the resulting row and column sums were reduced. **(13348)**

13.00-09 [83330]	2013-11-26

New Features and Changes

COM Interface:

- Visum in service environment: Visum started via the COM interface can now also be started and used by a program running as a service. In this case, methods that use the (then non-existent) interface, must not be called. **(12649)**

Dialogs:

- Shapefile export: The dialog for shapefile export settings now remembers your settings during a Visum session. There is also a button that allows you to restore the default settings. **(12970)**

Graphics:

➕ Column diagrams without scaling: When for the legend of a network object type with a column diagram, you select 'View only diagram filling', the scaling is no longer shown in the legend. This is also the case for pie charts. **(13271)**

Miscellaneous:

➕ Importing registry sections: With a prompt parameter, Visum can now import reg files into the registry when you start the program and export the registry sections used to a file when you quit the program. **(12650)**

VISUM Files:

➕ Messages when reading in network files: When you read in network files (additive or non-additive reading), error and warning messages are now only output with a file name and no longer contain the entire file path. This is also true for message files as well as for IMessage objects output via the COM interface. **(13239)**

➕ Reading network files (demand and model transfer files): The reading of network files and their variants (demand and model transfer files) was sped up. This improvement also benefits importers for foreign formats (OpenStreetMap, VDV452). **(12094)**

✅ **Fixed Bugs**

Add-In:

✅ Add-In 'Import Transit Supply': During readout of the original line routes, only those stop points are adopted that are route points of existing line routes **(13268)**

Data Model:

✅ Formula attributes: The program no longer crashes when you use a term of the type 'FROM[]' in a formula attribute (not formula matrix). This type of term refers to the attributes of an origin zone and is only allowed in formula matrices. **(13241)**

✅ Inserting a profile item into a coupled range: If in the coupled range of a time profile, you inserted an additional profile item to a stop point, and this stop point had a positive dwell time, the total of the "to times" of these items (the newly inserted and the previous one) did not equal the original "to time" of the previous item. This error has been fixed. **(13208)**

Dialogs:

✅ 'Edit stop' dialog: The program no longer crashes when you edit a stop, open the Create dialog for special time profile walk times or wait times, all time profiles referring to the stop are inactive, and the option 'Show active time profiles only' is selected. **(13240)**

✅ Exporting legend or background texts: The texts you wanted to export (legend or background texts) and selected in the 'Save texts file' were not considered correctly when saving the file. This error has been fixed. **(13256)**

Filters:

✅ Dependent attributes in filter conditions (I): For some network objects, there are calculated attributes that query the active status of another network object. These are 'On active link', 'On active line route', and 'Is terminal for active vehicle journey section'. If one of these attributes was part of a filter condition, the filter was not updated when links, line routes, or vehicle journey sections were inserted/deleted or their active status was changed. This error has been fixed. **(13142)**

✅ Dependent attributes in filter conditions (II): See description under 13142. **(13141)**

Foreign Formats:

✅ Export of lists to database: When you export list content to a database, you can now import the content like an attribute file again.You do not have to list all mandatory columns. One valid key detail is enough. Previously, lists exported into databases were treated like network files, i.e. that any missing mandatory attributes made the database unreadable. **(11985)**

✅ Read SQL database additively: When you imported an MS SQL server database additively, the list of the database tables incorrectly only contained a version block. This error has been fixed. **(13243)**

✅ TModel import: If for TModel import, the two directions of a link were listed separately in the file, an error occurred when you tried to read in the second direction. In addition, if an error was found in a link, all subsequent links could no longer be read in (but the rest of the network could). Both errors have been fixed. **(13160)**

Graphics:

✅ Labeling of bar diagrams: For bars that were not displayed, as they represented a very small value, the labeling was not displayed either. This error has been fixed. **(13148)**

✅ TIF file as background: TIF files with LZW compression could not be read in as a background. This error has been fixed. **(13228)**

✅ Turn volumes and projection: The radius shown in turn volume display was not correct, if a projection was used in the network. Now the mean value of the longitude in x and y direction at the current position is used as the radius. **(13015)**

Listings:

✅ Adding a column for an indirect attribute: When in a list, you used the shortcut menu to add a column with an indirect attribute that had a discrete value range (Enum), the values were not converted but output in internal code. **(13249)**

✅ Arithmetic operations for highlighted area: If in a list, a length attribute value was changed through a formula (e.g. "=*0.2"), a violation of the value range was output in metric units, even if imperial units were set for the network. This error has been fixed. **(13190)**

✅ Concatenating enum attributes: If in a list, an indirect attribute with an enumeration type was displayed via the 'Concatenate' aggregation function, and the maximum number of characters was exceeded, the cell remained empty. This error has been fixed. **(12676)**

✅ Highlighting elements in PrT path list: The program no longer crashes when you highlight paths in the PrT path list, a flow bundle is active, and the list showns flow bundle paths only. **(13236)**

✅ Row overflow behavior: Max. 2.1 billion rows can be displayed in a list. If this number is exceeded, which can actually happen, e.g. with PrT paths, the list opens empty, and a corresponding message is displayed. To display objects again, apply an OD pair filter or list flow bundle paths only to reduce the number of rows. **(11453)**

✅ Volume matrix between stop points: The program no lonnger crashes when you select a demand segment in the list 'Volume matrix between stop points (on path level)' or 'Volume matrix between stop points (on path leg level)'. **(13257)**

Matrix Editor:

✅ Split zone: The program no longer crashes when you undo the splliting of a zone in the Matrix Editor. **(13210)**

Network comparisons:

✅ Flow bundle and path list: The program no longer crashes when a model transfer file is generated, in the current network a path list is open, and in the comparison network a flow bundle is active. **(13144)**

Network Editor:

✅ Edit shape of line route / system route / PrT path: When editing the shape of a line route / system route / PrT path, you can right-click a line route item to open a search dialog, in which you choose a new destination. If in this dialog you clicked the 'Autozoom' button, the node or stop point selected was not always adopted as the destination (depending on the scale used at the beginning with the Edit shape command). This error has been fixed. **(13200)**

Other procedures:

✅ Disaggregate matrix: The 'Disaggregate matrix' procedure was changed, so that inevitable inaccuracies in calculations have less impact. **(11801)**

Procedure Sequence:

✅ Tooltip for messages: When during the procedure sequence, a tooltip was displayed for the 'Messages' field of a procedure, and this field contained more rows than could be shown on the screen, the tooltip kept 'flashing'. This error has been fixed. **(13119)**

PrT Assignment:

- ✅ ICA calculation for signalized nodes: When a lane group used the green times of multiple signal groups, in some cases the V/C value calculated was too high. This error has been fixed. **(13264)**

VISUM Files, Scenario Management:

- ✅ Reroute line route and close link: When in a model transfer file, you simultaneously rerouted a line route and closed a link via which the line route used to run, closure of the link failed. The same problem occurred with turns and stop points on the one side, and system routes on the other. This error has been fixed. **(13178)**

13.00-08 [82860]	2013-11-05

⊕ New Features and Changes

Demand procedures:

- ⊕ EVA weighting: The 'EVA weighting' procedure has been further accelerated, which is particularly noticeable when you use multiple computation kernels. **(13169)**

✅ Fixed Bugs

Add-Ins:

- ✅ Import Transit Supply: If in a source network a vehicle unit was allocated to multiple transport systems, only one of these transport systems was imported. Consequently, vehicle journeys could not be imported for lines of transport systems that were not previously imported. This error has been fixed. **(12969)**

COM Interface:

- ✅ Changing the direction of traffic: When you changed a network's direction of travel via the COM interface by setting the attribute 'LeftHandTraffic' at the INet object, this did not result in consequential changes to node geometries and signal controls. This error has been fixed. **(12821)**

Data Model:

- ✅ Visum 12.5 formulas and comma as decimal separator: When you read in Visum 12.5 version files with a comma as decimal separator, and these files contained formula matrices or formulas in procedure parameters (procedures 'Edit attribute' or 'Linear combination of matrices and vectors'), problems could occur when you tried to read the files into Visum 13.
  In other words:
  If it contained a formula matrix, the Version file could not be read in.
  If it contained procedure parameters, the corresponding procedures could not be carried out.
  This error has been fixed. **(13080)**

Dialogs:

- ✅ Classifications in graphic parameters: In dialog 'Edit classifaction', when using an attribute with the unit 'percent', the number of decimal places specified only referred to the basic unit, not to the attribute unit displayed (1% = 0.01). This error has been fixed. **(13140)**

- ✅ User preferences and font: If in a User Preferences dialog that contains a button for font selection, you changed a setting and then the font or font size, any previous changes you made in the same dialog were lost. This error has been fixed. **(13212)**

Foreign Formats:

- ✅ VDV452 Export: VDV452 data export now also includes the export of time profile points that are not located at stop points. To allow for this, a separate stop type number 42 with the description text 'only timing point' and short description 'OTP' is entered in the VDV tables STOP_TYPE (997) and POINT_TYPE (998). **(13086)**

Graphical procedures:

- ✅ Read network additively and Shortest path search: The program no longer crashes when a network file is read additively, and in the loaded network, the Shortest path search is activated. **(13145)**

Graphics:

- ✅ 2D Isochrones Display: When you calculated the 2D display (area-based display of isochrones), the lengths were not calculated correctly, if you had set a projection. Now the calculation results are correct, if for the projection you use the same scale for the x and y direction. If you use different scales, an averaged scale is applied and a corresponding message is displayed. **(13016)**
- ✅ Background map with small network window: The program no longer crashes, when a network window is drawn for which a very small background map (height and width of only a few pixels) is activated. **(13161)**
- ✅ High resolution screenshot with live background: The program no longer crashes when you create a high resolution screenshot, using a background map with a copyright notice (Bing Maps). **(13211)**

Main Window:
- ✅ Closing or removing views: When you close or remove a view from a tab group, the following tab of the same group is now activated. The entry sequence in the VISUM window list only plays a role, if there are no other windows within the same tab group. **(12870)**
- ✅ Tooltips in Search dialog: When you closed a network object Search dialog and then opened it again, the tooltips for buttons (Synchronization, Attribute selection, Cancel search, etc.) were no longer displayed. This error has been fixed. **(13138)**

Matrix Editor:
- ✅ Formula matrices: The values of formula matrices that reference a formula UDA (user-defined attribute) are now updated correctly, whether the fomula UDA is changed directly or indirectly. **(13041)**

Network comparisons:
- ✅ Model transfer files and fare model: Model transfer files did not contain any deletion tables for the relation objects StopAreaTo fare zone. This error has been fixed. **(13149)**
- ✅ Special transfer walk times or transfer wait times in the model transfer file: If network B did not include special transfer times that were part of network A, the model transfer file did not contain these times as deleted network objects. This error has been fixed. **(13116)**

Network Editor:
- ✅ Data error after editing shape: If while editing the shape of a line route (system route PrT path), you closed Visum using the x in the upper right corner and saved the Version file, this could lead to line routes (system routes, PrT paths) with an empty course. As a result, the program could show undefined behavior. This error has been fixed. **(13143)**
- ✅ Marking turns: In some cases connected with turn volumes, marked turns were not highlighted as such in the Network window. This error has been fixed. **(13124)**

Other procedures:
- ✅ Setting signal programs for RBCs: The 'Set signal programs' procedure kann now also be used to set the signal program for RBCs. **(12080)**

PrT Assignment:
- ✅ Update of journey time (t_Cur): When you changed transport system data, in particular the car units, the journey time in the loaded ntewokr (t_Cur) and the parameters derived thereof (impedance) were not updated. This error has been fixed. **(13202)**

PuT Assignment:
- ✅ Fare calculation: Due to a program error, fare calculation was not always stable. That means the program could output different results for the same calculation. This error has been fixed. **(13125)**

TFlowFuzzy:
- ✅ Progress statistics for multiple demand segments: If you performed the matrix correction procedure TFlowFuzzy for multiple demand segments, the progress statistics only contained information on the last demand segment used. Now the statistics for all demand segments are written to the results file, one after the other. **(12629)**

VISUM Files:
- ✅ Automatic backup copy: Automatic backup copies were no longer made, as soon as you opened the Graphics tools window or a floating dialog for Lines / Line routes, System routes or PrT paths / Path sets. This error has been fixed. **(13188)**

- ✅ Writing a list to a database: The program no longer crashes, when you export a list to a database (or attribute file) and have specified an alias for a key column. **(13184)**

13.00-07 [82258]   2013-10-11

➕ New Features and Changes

Add-Ins:

- ➕ Add-in 'Import Transit Supply': For the add-in 'Import Transit Supply', the map matching algorithm was changed in order to improve mapping to the target network. **(13118)**

PrT Assignment:

- ➕ Parallelization in LUCE: Impedance calculation within the PrT assignment procedure LUCE has been parallelized and thus accelerated. **(12977)**

✅ Fixed Bugs

ANM:

- ✅ Vehicle classes at detectors: ANM files could not be read in Vissim, when the network contained detectors to which public transport systems were assigned. This error has been fixed. **(13040)**

COM Interface:

- ✅ Map matching, incremental algorithm: Several mistakes in the incremental algorithm of the MapMatcher have been fixed:
  1) If a point of the result was on the relative position 0 of a link (i.e. equivalent to on relative position 1 of an adjacent point of a from-node), the result output was not stable.
  2) For u-turns, points were sometimes allocated to the wrong link direction.
  3) In certain cases, involving relative position 0 or 1, the distance score was incorrect. **(13130)**

- ✅ Map matching, incremental algorithm: With the incremental version of the map matching function, a shortest path search is performed, if the distance between the entry points is too large. Previously, the program carried out a shortest path search for the 6 links closest to the entry point, instead of evaluating the 'MaxNumberOfCandidateLinks' parameter and accounting for the resulting number of closest links. This error has been fixed. **(13117)**

Dialogs:

- ✅ Demand data: When in the "Demand segments" tab, you right-clicked the "Matrix" column, the program crashed. This error has been fixed. **(13082)**

- ✅ Lane allocation classified by enumeration type: The program no longer crashes when in the Graphic parameters dialog, under 'Lane allocation' / 'Display', you choose the attribute 'Control type' or 'Effective control type' for classified display, and then confirm the prompt that you want to calculate discrete values for the attribute. **(13139)**

- ✅ PuT Fares: Changes you made to distance-based supplements in the dialog were not saved. This error has been fixed. **(13088)**

Graphics:

- ✅ Program crash during selective reading of bar graphic parameters: The program no longer crashes during selective reading of bar graphic parameters, when for the bar layer of the file, a position is specified that is already in use by another sublayer (object, labeling, bar labeling). **(13042)**

Junction Editor:

- ✅ RBCs: After you edited RBCs in the RBC dialog, channel numbers of RBC vehicle detectors were incorrectly discarded. This error has been fixed. **(13081)**

Main Window:

- ✅ Transfers display of regular services and a new network: The program no longer crashes when you generate a new network, have opened the Transfers display of regular services, and under User Preferences for window configuration, you have either selected 'Apply from version file, otherwise reset', and the version file does not contain any information, or you have chosen 'Keep always'. **(13087)**

Network Editor:

- ✅ Tabular editing of line routes: When you specified a line route and used tabular editing to reroute it in the middle of its course, the following error message was output: 'There is no link sequence for the new course.' If you then did not quit the Edit shape mode, corrupt data could lead to undefined program behavior or a program crash. This error has been fixed. **(13126)**

PuT Assignment:

- ✅ Headway-based assignment: The program no longer crashes during headway-based assignment, when you use negative factors for wait time. **(13083)**

Umlegung IV:

- ✅ LUCE procedure with node volume-delay functions: Impedance calculation did not previously account for the fact that node volume-delay functions cannot be separated, i.e. that volume changes at one turn also affect the impedance at all other turns of the same node. This error has been fixed. **(13132)**

VISUM Files:

- ✅ XML procedure parameters with DUE settings: When an XML procedure parameter file contained settings for the PrT assignment procedure DUE, it could not be read into Visum again. This error has been fixed. **(13120)**

⚠ Breaking Changes

PrT Assignment:

- ❗ Parallelization in LUCE: Impedance calculation within the PrT assignment procedure LUCE has been parallelized and thus accelerated. This may lead to slight differences in your calculation results, particularly if you are using node volume-delay functions. These new results, however, are stable. **(12977)**

13.00-06 [82006]	2013-09-30

⊕ New Features and Changes

Installation:

- ⊕ User-Defined Volume Delay Functions: The example project provided for user-defined volume delay functions was extended by a 64-bit configuration. **(13065)**

✅ Fixed Bugs

ANM:

- ✅ Roundaboutexitradius: Der Wert Roundaboutexitradius wird beim ANM-Export nun an die aus dem Kreisverkehr ausgehende Strecke geschrieben, nicht mehr an die eingehende Strecke. **(13064)**

COM Interface:

- ✅ PrT shortest path search: After you perform a PrT shortest path search via the COM interface (Visum.Analysis.RouteSearchPrT), the Property RouteSearchPrT.NodeChainPrT is now listed at the correct position in the node sequence. Previously, it only contained n copies of the last node of the sequence, whereby n is the number of nodes of the shortest path search. **(13069)**

Data Model:

- ✅ Formulas: Formulas (formula attributes, formula matrices, procedures 'Edit attribute' and 'Linear combination of matrices and vectors') using 1:n relations and aggregation functions could no longer be read in. This error has been fixed. **(13078)**

Foreign Formats:

- ✅ Access import: Visum sometimes crashed during Access import. (This happened when the program tried to recognize the number of key columns of a table.) This error has been fixed. **(13066)**

Junction Editor:

- ✅ Adjustment of node geometries: When you made certain changes to a node or main node (e.g. TSysSet of a turn), the attribute 'Use lane definition of node' of the respective node or main node was incorrectly set to 'true'. This error has been fixed, i.e. if the node or main node default geometry is not changed, neither is the value of this attribute. **(13063)**

- ✅ Flickering: When you use the Junction Editor, the top section no longer flickers, when in the bottom section, you keep the mouse button held down. **(12847)**

Network comparisons:

- ✅ Version comparison patterns: You can now use new or recently edited version comparison layouts, if these have been created in another language than the one currently used. (This is possible, as the table $VERSION, which also contains the language, is now saved to the layout file of version comparisons.) **(12960)**

Timetable Editor:

- ✅ Axes labeling in graphical timetable: Your axes labeling (horizontal or vertical) in the graphical timetable is no longer lost, when you select 'Standard' for labeling stops / stop points, and you change the label's font size. **(13058)**

VISUM Files:

- ✅ Reading attribute files: The default values used to assign columns when you read in attribute files now also account for aliases in the network that contain lower-case letters. **(12995)**

13.00-05   [81858]   2013-09-20

⊕ New Features and Changes

Data Model:

- ⊕ OD pair PuT shortest path search to vehicle journey: There is a new OD pair from the list 'Shortest path search PuT' to the vehicle journey made. **(12892)**

Foreign Formats:

- ⊕ VDV452 Importer: The IDs of stop points are now adopted as they are. They are no longer put together of the original ID and the type ID. **(12871)**

Graphical procedures:

- ⊕ Shortest path search PuT: For PuT shortest path search you were not able to edit the extension, which always corresponded to the length of the analysis perod. Now you can explicitly specify the extension as you can the assignment. **(13014)**

PuT Assignment:

- ⊕ Capacity-restricted timetable-based assignment: For capacity-restricted timetable-based assignment, you can now optionally have a convergence protcol created. It consists of a comma-separated text file, including the attributes iteration step, vehicle journey number, vehicle journey item index, volume (AP), and penalty (unsmoothed) and is generated for each iteration. **(10817)**

Schematic line diagram:

- ⊕ Edge courses: These new attributes are now available at directed edges: "Most frequent departure times per four hours" and "Most frequent arrival times per four hours". **(12881)**

✅ Fixed Bugs

COM Interface:

- ✅ Access to IMarking: The (read) call of Visum.Net.Marking.Changed, Visum.Net.Marking.GetAll, Visum.Net.Marking.ObjectType or Visum.Net.Marking.Count used to reset the Insert mode or Spatial selection mode back to the Edit mode. This error has been fixed. **(13031)**

Data Model:

- ✅ Changing the number of a POI: When you changed the number of a POI, which in turn changed the relative sequence of POI numbers in the category, this led to undefined program behavior or a program crash when you opened the 'Edit POI' dialog. This error has been fixed. **(13026)**

- ✅ Double lane turns: You used to be able to generate lane turns with the same From and To lane (i.e. corrupt data) by inserting an existing lane again via the COM interface. This is now prevented in the data model. **(13030)**

✅ Formula matrices, formula attributes: In formulas (formula attributes, formula matrices, multi-edit), the operator '^' (power) incorrectly had the same order of operations as '*' and was left-associative. This produced wrong results for the evaluation (as (2*3)^4 != 2*(3^4)). This operator is now omitted, as the POW function returns the same results. When you read in legacy data, the operator is now replaced by the POW function. However, formulas into which the operator was entered manually will become invalid. It is likely that this formula has not been evaluated correctly in the past. **(12975)**

✅ RBC detectors: When the program reads the RBC file, lanes are now automatically assigned to detectors based on the signal groups and lane turns allocated to the detector. **(12992)**

Dialogs:

✅ 'Scale' in dialog 'Background objects administration': The 'Scale' function in the dialog 'Background objects administration' did not work properly when you selected a non-metric coordinate system. This error has been fixed. **(13027)**

✅ Assignment of attributes when reading in attribute files and shape files: When you read in attribute or shape files for attribute assignment and a possible Visum attribute was recognized, yet did not have the required subattribute, the translation of the attribute short name was displayed on the left, but no target attribute was assigned. Now the name of the attribute found in the file is displayed first. Only after it is actually assigned, is the translation of the target attribute's long name displayed. **(12804)**

✅ Edit link: In the Links dialog, under Network settings, the "toll" attribute is now always displayed with the defined number of decimal places. **(12983)**

✅ Edit turn standards: When for a turn standard the node type was 0 and you edited this entry, the field 'Node type' in the 'Edit turn standards' dialog was empty. This error has been fixed. **(13022)**

✅ Flow bundle dialog (and other graphical procedures): The program no longer crashes when you under Flow bundle definition, in the first row, click the "First" button, then hold down the SHIFT key and in the last row of the grid, click the "And then" button twice. Display problems in the Flow bundle dialog (and dialogs of other graphical procedures) have also been fixed. They used to occur when you reduced the Visum window to the extent that the docked Flow bundle dialog had a scrollbar that was scrolled to the bottom. **(12993)**

✅ Graphic parameters dialog in schematic line diagram: With the classified display of transfer nodes, you can now also change the font color directly in the table of the respective class. **(12916)**

✅ Scenario Management: When you switch to another language, in Scenario Management, in the main dialog, the tab titles are now immediately displayed in the new language. **(12980)**

Foreign Formats:

✅ VDV452 Export: During VDV452 export, the data type length of exported tables is adjusted to the actual data length, when the data to be exported has a larger value than specified in the specification of the VDV interface. **(13032)**

✅ VDV452 Export: For VDV452 export, the user-defined attributes of time profiles were not exported (desired target: table 'menge_fgr'). This error has been fixed. **(12834)**

✅ VDV452 Export: The memory required by the exporter has been signficantly reduced. **(12893)**

✅ VDV452 Export: The program no longer crashes when you quit the Progress dialog of VDV452 export. **(12896)**

Graphical procedures:

✅ Flow bundle results and network changes: When you inserted zones into a network that did not contain PrT assignment results, but PrT flow bundle matrices, the dimension of the flow bundle matrices remained the same. When you saved this network as a version file, it could not be opened again later. This error has been fixed by adjusting the dimension of flow bundle matrices accordingly. **(13023)**

✅ PuT isochrones based on arrival time: During the calculation of PuT isochrones based on arrival time, the attribute "PuT isochrone time" is now also used at nodes that do not have a stop area. **(13002)**

✅ PuT shortest path search: The results of a PuT shortest path search did not account for changes made to walk times between stop areas, if these were made via a list or the COM interface. This error has been fixed. Changes made via the dialog, however, were accounted for by calculating a new shortest path. **(13011)**

✅ PuT shortest path search: The search time period for PuT shortest path search must lie within the analysis period. Visum now supports the user in meeting this condition - by providing better default data, an adjusted day selection, and meaningful warnings when errors occur. **(12894)**

Main Window:

- ✔ Switching between programs: When you switched from Visum to another program and back to Visum again, it was the View last used in Visum that was shown (e.g. the Network editor), even if the focus had been on a Tool window (e.g. 'Matrices'). When you now switch back to Visum, the window that had the focus is shown. **(12859)**

Matrix Editor:

- ✔ Arithmetic operation for selected area: When in the Matrix Editor, in the List view, you perform arithmetic operations for a selected area, relations outside the selected area are no longer mistakenly affected. Moreover, you can now perform the operations for any selected area of your choice. **(12882)**

- ✔ Arithmetic operations for selected area: To perform arithmetic operations with a selected area of external matrices, you used to be able to select network parameters or zone attributes for allocation on the right side. When you made the allocation, however, the program crashed. Now it is only possible to select these operands for Visum matrices. **(13001)**

- ✔ Combination of matrices and vectors: The interactive definition of a matrix via new matrix formulas can now be undone, as is common for any data changes. **(12933)**

- ✔ Restoring the layout: When you read in a version file, the Matrix Editor layout saved is now reliably restored, even if the Editor contains an external matrix. **(12822)**

Network Editor:

- ✔ Calculate slope from z coordinates: The multi-edit special function 'Calculate slope from z coordinates' did not work correctly for links when in Visum you set a projection with a non-metric coordinate system. The projection is now accounted for correctly, and the z coordinate is no longer multiplied by the network scale because it normally contains a height in meters. **(13028)**

- ✔ Edit line route shape: When you right-click and open the Search dialog to add an intermediate point to a line route (not drag the mouse), and no path to the point is found, the program now issues a meaningful error message. **(12928)**

- ✔ Edit shape of line route: When you now edit the shape of a line route (or another course object) and click "Auto Zoom", the highlighted object is no longer displayed double. **(12900)**

Other procedures, Network Editor:

- ✔ For intersection, the buffer sizes were multiplied by the network scale, even when you had set a projection. So the intersection results were wrong when a projection was set for a network that did not use meters as a unit and additionally had a network scale unequal to 1. This error has been fixed. **(13021)**

Other procedures:

- ✔ Signal time optimization: Signal time optimization for VISSIG controller with second green time could fail when there were multiple volume conditions for a signal group. This error has been fixed. **(13046)**

PrT Assignment:

- ✔ ICA calculation for RBC: When for an RBC there was no signal group within a ring in a barrier, the start and end times of the phases were not calculated correctly. This error has been fixed. **(13050)**

PuT Assignment:

- ✔ Capacity-restricted assignment: With capacity-restricted timetabe-based assignment, transfer of the conection volume to vehicle journey items contained a methodical error: The final vehicle journey item of a path leg was mistakenly also assigned a volume. This error has been fixed. Depending on the network and quality of the convergence, this can lead to different assignment results. **(12997)**

- ✔ Connection file names: The name of a connection file may now contain several dots. Previously, the name had been cut off after the first dot. **(12994)**

- ✔ Headway-based assignment with negative costs: When you used negative costs for the definition of perceived journey time, headway-based assignment for a more complex network could, under certain cirumstances, crash with a "stack overflow". This error has been fixed. **(12966)**

PuT Line Blocking:

- ✔ Cancelation of procedure: When you calculate line blocking for which system routes are automatically generated, and this line blocking is canceled, e.g. due to an error, Visum no longer crashes when the procedure is quit. **(12998)**

PuT Operating Indicators:

✓ Parallel calculation: When you calculated PuT operating indicators, using multiple computation kernels, this could lead to unstable results for territory-based evaluation and revenues. In the worst case, the program crashed, particularly when for a ticket type many sampling points were specified for the conversion of fare points into the ticket price. This error has been fixed. **(13010)**

Subnetwork Generator:

✓ RBC data: When intersecting a subnetwork, RBC data were not fully accounted for. Consequently, the subnetwork generated behaved erroneously and the program could crash. This error has been fixed and was also reported under ID 12335. **(12913)**

Timetable Editor:

✓ Shift vehicle journey to a different line: After you moved a vehicle journey to a different line, the stop point sequence was not always adjusted correctly. In this case Visum crashed, when a version file was written while the Timetable Editor was open. This error has been fixed. **(12987)**

VISUM Files, Dialogs:

✓ Formula matrices, formula attributes: The display of formulas (in formula attributes, formula matrices, multi-edit) has been changed. Now formulas, and particularly the attributes they contain, are displayed in the language currently selected. In addition, the decimal separator set under User Preferences is now considered, so you can also use a comma as your decimal separator. Then a semi-colon is used as a separator of operands for functions with multiple parameters. **(12531)**

VISUM Files:

✓ Additive reading of demand files: After additive reading of demand files containing conflict avoidance data and a numeric offset, the offset did not internally reset. This could lead to wrong object allocations during later actions in Visum. This error has been fixed. **(13000)**

✓ Reading zones additively: The program no longer crashes when you read zones additively, and the offset you specified to avoid conflicts also occurs as the distance between numbers of the zones you want to read in. **(12967)**

✓ Version files with area main nodes: Reading in version files that contained a lot of main nodes with areas took unreasonably long. This error has been fixed. **(13013)**

⊘ **Breaking Changes**

PrT Assignment:

⊘ ICA calculation for RBC: When for an RBC there was no signal group within a ring in a barrier, the start and end times of the phases were not calculated correctly. This error has been fixed.
This means that the ICA calculation results for such nodes and the results of assignment with ICA are now different. **(13050)**

PuT Assignment:

⊘ Capacity-restricted assignment: With capacity-restricted timetabe-based assignment, transfer of the conection volume to vehicle journey items contained a methodical error: The final vehicle journey item of a path leg was mistakenly also assigned a volume. This error has been fixed. Depending on the network and quality of the convergence, this can lead to different assignment results. **(12997)**

13.00-04 [81482]   2013-08-30

⊕ **New Features and Changes**

Dialogs:

⊕ Lines / Line routes, "in selection": When you changed the "in selection" settings, in the 'Network window', the red dot, indicating that some objects have not been selected, was not adjusted correctly. This error has been fixed. **(12798)**

Main Window:

⊕ Tabs can be closed using Ctrl + W or middle mouse button. **(11851)**

Miscellaneous:

➕ Warnings during deinstallation: Warnings can also be shown during deinstallation in the /SILENT or /VERYSILENT mode. To suppress them, you can enter the new parameter /SUPPRESSMSGBOXES in the command line. **(12908)**

✅ Fixed Bugs

COM Interface:
- ✅ AddBackground: The method AddBackground now also works when there is no World File, but the background image file itself contains coordinate information - such as an ecw fie, for example. **(12887)**

Combination of matrices and vectors:
- ✅ Computing time: When in the formula definition of the procedure, you set operations such as "Transpose", the computing time was longer than compared to version 12.5. This error has been fixed. **(12778)**

Data model:
- ✅ Coupled time profiles: When another time profile is added to an existing couple section, vehicle journeys were adapted inconsistently under certain circumstances. This error has been fixed. **(11417)**
- ✅ Formula matrices: The program no longer crashes when you define recursive matrix formulae. Now a meaningful warning is displayed and the matrix is set to zero. **(12934)**
- ✅ Turn standards: It was incorreclty possible to assign the ID of a turn standard twice. The subsequent behavior was not defined. This error has been fixed. **(12878)**
- ✅ User-defined basic volume attributes: Previously, user-defined basic volume attributes whose ID contained the words 'VOL' or 'IMP' could not be selected. This error has been fixed. **(12915)**

Demand procedures:
- ✅ Box-Tukey transformation: Including for special case b=0, this matrix transformation now supplies correct results. **(12942)**
- ✅ Tour-based model mode choice: The procedure is now only canceled because of a mode total utility of 0, if there is a demand for the respective relation. **(12925)**
- ✅ Visem distribution utility matrices: When utility matrices are stored permanently across procedure execution, they now consider a matrix transformation (e.g. Log, Exp, Symmetrize) for the linear combination in the utility definition. In the calculation itself, such a transformation has always been taken into account correctly. **(12924)**
- ✅ Visem: The convergence condition for Furness (destination-bound binding) was flawed because deviations for row and column sums were not always considered separately. This error has been fixed. **(12948)**

Dialogs:
- ✅ Analysis time intervals: When you edit analysis time intervals, the validity of your entries is now only checked when you close the dialog. Intervals may overlap temporarily, which makes it easier to shift them to different times. **(12958)**
- ✅ Calculate PuT skim matrix: In the Parameters dialog of the procedure, the controls for Vol/Cap ratio-dependent impedance on the "Search" page are now available the moment you activate the capacity restriction on the "Base" page. **(12932)**
- ✅ Editing vehicle combinations: The program no longer crashes when you edit a vehicle combination, then click OK to close the subdialog 'Allocated vehicle unit', and there are no existing vehicle units yet. **(12910)**
- ✅ Multi-edit transport systems: When you used the Multi-edit function to edit attributes of the type transport system set, the precise value type was not taken into account. It was thus possible to select PrT systems for stop points. This type of assignment was then rejected with an error message. Now the number of transport systems you can select is limited to the number of transport systems you may assign. **(12931)**
- ✅ Project and other directories: Several tables in the 'Edit project directories' dialog could no longer be sorted by columns. This error has been fixed. **(12917)**
- ✅ Scenario Management: When in a project you load scenario results, the description and all other data in the table are now permanently visible. You no longer need to click into the table to update it. **(12945)**

- ✅ Search dialog for lines: The option "Only search within" does not apply to lines and is thus no longer displayed in the dialog. **(12943)**

- ✅ Ticket types dialog: When you edit a ticket type using the four tabs visible in the dialog (e.g. a "From-To zone-based fare"), and click the last tab before closing the dialog, you will no longer receive an error message when opening a Ticket type dialog with only three tabs. **(12926)**

Foreign formats:
- ✅ Access import: When you imported time profiles that contained invalid profile items, the program could crash. This error has been fixed. **(12937)**

- ✅ VDV 452 import: You can now also read in unsorted line entries of the "rec_lid" table. **(12883)**

- ✅ VDV 452 export: Circle lines are now segmented correctly in all cases. **(12832)**

- ✅ VDV 452 export: When you export circle lines, the export process is no longer canceled due to multiple existing keys. **(12912)**

- ✅ VDV 452 Import: When input data contains identical keys, now a more meaningful error message is displayed. In particular, the message states which table and key are affected. **(12890)**

Graphical procedures:
- ✅ Delete demand segment: When you calculated a flow bundle and then deleted the demand segment on which the flow bundle was based, the program crashed. This error has been fixed. **(12856)**

Junction Editor:
- ✅ Signal times: The program no longer crashes when you change to the Signal times view, and the height of the upper window (= graphic display) is reduced to 0. **(12946)**

Listings:
- ✅ Search dialog: When you opened a list, then opened the Search dialog and right-clicked the row number column of the Search dialog, the program crashed. This error has been fixed. **(12884)**

Main Window:
- ✅ "Messages" window: If the message window showed information referring to a matrix, and you clicked the relevant row, the program crashed. This error has been fixed. Additionally, if there is a message without a netobject reference an existing marking will not be removed. **(12827)**

Matrix Editor:
- ✅ Combination of matrices and vectors: When in the 'Matrices' tool window, in the shortcut menu of a matrix, you click 'Combination of matrices and vectors', the new Matrix formula dialog is shown there. **(12902)**

- ✅ Entry of invalid values: When in the Matrix Editor, in the list view, you entered an invalid value, a corresponding message was displayed for each selected cell. From now on, the message is only displayed once. **(12854)**

Network Editor:
- ✅ Editing lines: When a network includes lines, but no line routes, and you activate the Line routes mode, the shortcut menu now contains the commands Delete and Multi-Edit again. **(12785)**

- ✅ Split link: The program no longer crashes when you split links and have activated the screenline and link filters. **(12904)**

Other procedures:
- ✅ Set times for time profiles: When in the procedure "Set times for time profiles", you have not selected a valid source attribute, the procedure is now canceled with an error message. **(12905)**

PrT Assignment:
- ✅ ICA, signalized: With inner turns, sneakers are now also accounted for in permitted/protected stages and not only in purely permitted stages. This leads to a higher capacity and shorter waiting times. **(12920)**

- ✅ LUCE: The convergence control was modified to speed up the procedure, resulting in more, but faster inner iterations. The overall run time has been reduced to the level of Visum 12.5. Slight changes in assignment results are possible - particularly in networks with poor convergence. **(12947)**

✔ TRIBUT-Equilibrium-Lohse: When 2 matrix toll systems converge at the same (main) node, the (virtual) turns are no longer closed. **(12885)**

PuT Assignment:

✔ Headway-based assignment: If a network contained time profile items at which passengers could neither board nor alight, the program incorrectly calculated a negative number of fare points. In certain cases, the procedure then crashed. This error has been fixed. **(12951)**

✔ Timetable-based assignment: Visum will no longer crash sporadically when timetable-based assignment is carried out in multicore mode. This problem occurred since service pack 13.00-02. **(12957)**

Scenario Management:

✔ Indicators: When indicators were written that exceeded the limit of rows used in the SQL Server database, the calculation status was not set to "calculated". This error has been fixed. **(12922)**

✔ Opening projects written with Visum 12.5 or previous versions: When you load projects written in previous versions of Visum, the scenarios calculated are now indicated with the correct calculation status. **(12962)**

Schematic line diagram:

✔ Read the layout: When reading in layouts with multiple trip IDs, you can now skip all corresponding warnings at once. The total number of ambiguous IDs is output correctly at the end of the read-in process. **(12949)**

Timetable Editor:

✔ Find command: When in the Timetable editor you searched for a journey that was currently not displayed, you were asked whether you wanted to add this journey (and your time profile). When you clicked "No", you were asked repeatedly. This error has been fixed. **(12888)**

✔ Undo copying of time profiles: The program no longer crashes, when you undo multi-level copying of time profiles, including changes to the allocation of vehicle journeys. **(12903)**

Visum Files:

✔ Read Version file: The graphic parameter "Marking color 2" now remains the same when you save the Version file and open it again, even if the Version file contains different graphic settings for the network and Smart Map. **(12929)**

✔ Reading in .ver files: The program used to crash during binary reading of LLE results and emission results, when the file contained invalid data. Now the reading in is canceled and an error message is displayed. **(12873)**

🛑 **Breaking Changes**

Demand procedures:

🛑 Box-Tukey transformation: Including for special case b=0, this matrix transformation now supplies correct results. **(12942)**

🛑 Visem: The convergence condition for Furness (destination-bound binding) was flawed because deviations for row and column sums were not always considered separately. This error has been fixed. Procedure results may change accordingly. **(12948)**

PrT Assignment:

🛑 ICA, signalized: With inner turns, sneakers are now also accounted for in permitted/protected stages and not only in purely permitted stages. This leads to a higher capacity and shorter waiting times. . **(12920)**

🛑 LUCE: The convergence control was modified to speed up the procedure, resulting in more, but faster inner iterations. The overall run time has been reduced to the level of Visum 12.5. Slight changes in assignment results are possible - particularly in networks with poor convergence. **(12947)**

13.00-03 [81156]	2013-08-08

⊕ **New Features and Changes**

Data Model:

- POIs: The data model was extended by the following relations: Starting from network "Points of Interest" (provides alle POIs), starting from network "Points of Interest X: Y" (provides all POIs of the category number X and name Y), starting from POI of "network". **(11041)**

Dialogs:

- Find a network object: When you close and then reopen the dialog, the focus is now on the entry field. **(12813)**

Foreign Formats:

- OSM (Open Street Map): OSM data can now also be read in directly as compressed Bzip files. **(12085)**

Installation:

- Office 64bit: If Access was installed in the 64bit version, the 64bit VisumDbServer was not registered correctly, so that reading of and writing to Access databases was not possible. This particularly occurred when Outlook was not installed. This error has been fixed. **(12868)**

✅ Fixed Bugs

Add-Ins:

- Transit Supply: Vehicle journey sections are now transferred correctly from the origin network to the destination network. When you geocode stop points on nodes, multiple stop points might be linked to the same node. In this case, the original time profiles and vehicle journeys need to be adjusted. The adjustment of time profiles and vehicle journeys has now beeen corrected. **(12811)**

ANM:

- Detectors: Length and position data for detectors defined at nodes with RBC controllers is now adopted correctly from the ANM file. **(12867)**

COM Interface:

- Flow bundle / Path list: When you perform a flow bundle calcualtion via the COM interface, open path lists are now updated correctly. **(12866)**

Data Model:

- RBC: When you used the RBC dialog in the junction editor, not all data was adopted when you exported a congestion detector referencing a vehicle detector that had not been exported yet. In addition, for congestion detectors referencing the first Transit signal group, the reference was not resolved correctly. This error has been fixed. Moreover, the detector position is no longer intialized with (0|0), but with the position of the the first node controlled by the SC of the detector. **(12814)**

Demand procedures:

- Mode choice: In certain cases, procedures and procedure sequences were not canceled, although an error was reported. Now all errors result in cancellation. **(12823)**

- Trip distribution: The procedure Trip distribution (4-step) wrongly returned the transposed of the actual results matrix. This error has been fixed. **(12841)**

Dialogs:

- Aliases: When in the "Aliases" dialog, you edited the grid cell "Name" and clicked outside the table, the program sometimes crashed. This error has been fixed. **(12833)**

- Floating-point numbers in filter dialogs: In the Filter dialog, on the right side of a condition, decimal spaces are now added to floating-point numbers without a unit specification. For a more precise indication, you can specify the number of decimal spaces for 'Other floating-point numbers' under Network settings (('Attributes' dialog). **(12849)**

- User preference 'Load map services automatically': When you opened the User preferences dialog, the option 'Load map services automatically when opening version files and graphic parameter files' was not adopted properly from the data. As a result, the option was deselected when you closed the dialog. This error has been fixed. **(12851)**

Filters:

- Formula attributes: If a formula attribute was used in a filter condition, and the value of an attribute used in this formula was changed, the filter was not always updated. This error has been fixed. **(12678)**

Foreign formats:

- ✅ VDV452 Export: Route points that are not stop points are now treated appropriately. **(12857)**
- ✅ VDV452 export: Entries for link stop points were not written to the 'stop' table. This error has been fixed. **(12830)**
- ✅ VDV452 Export: Now stop points without time profile items no longer generate a too short link entry. **(12863)**
- ✅ Writing shapefile: When you export a shapefile, the file name specified is extended by a suffix. In addition, it is checked whether a file of the same name already exists. If so, a warning is issued before you overwrite it. The check used to be carried out for the file name specified and not for the actual file name including the suffix. This error has been fixed. **(12848)**

Graphical procedures:

- ✅ Flow bundle results and network changes: When you insert zones, PuT assignment results and PuT flow bundle results are not deleted. However, the dimension of flow bundle matrices did not use to change. If you save such a network as a Version file, you cannot open it again later. This error has been fixed by adjusting the dimension of flow bundle matrices to the new situation. **(12874)**
- ✅ PuT flow bundle and survey data: PuT flow bundle no longer crashes, when there are implausible path legs of the type 'preceding'. **(12844)**

Graphics:

- ✅ Adapting projection: When you activate a background map, you can optionally adjust projection for a better display of the background map. For certain initial projections, this led to a misalignment between map and network. This error has been fixed. **(12777)**
- ✅ Legend, scale: The graphic scale in he legend is now colored black and white. The white areas no longer have the same color as the background. **(12802)**
- ✅ Legend: Legend background objects were not visible after you inserted them, but only after you updated the view. This error has been fixed. **(12801)**
- ✅ Matrix bar label of turn volumes: When in a column (i.e. for a bar), no value was displayed for any of the rows (i.e. turns), the column header was still displayed. This error has been fixed. **(12845)**
- ✅ Matrix bar text: When drawing matrix bar text, the program sometimes crashed. This error has been fixed. **(12846)**
- ✅ Program crash with Bing backgrounds: The program no longer crashes when drawing a network with a Bing map as a static background, and neither a live background map nor a background layer are activated. **(12852)**
- ✅ Sum row of bar labels: For labels in classified bar display, the color of sum rows was not always correct. This error has been fixed. **(12840)**

Listings:

- ✅ Editability of UDAs: When you changed the type of a user-defined attribute (UDA) from "Formula" to a different type or vice versa, the UDA become editable, respectively non-editable. In an open list, such changes did not automatically adjust editability as well. This error has been fixed **(12687)**
- ✅ Fares in PuT shortest path search: In 'PuT shortest path search', fares are now displayed again. **(12869)**

Network Editor:

- ✅ Deleting coupling sections: When you used Multi-delete to delete coupling sections, Visum could get stuck in an infinite loop. This error has been fixed. **(12853)**

Other procedures:

- ✅ Open matrix: When you read in matrices per procedure and the matrices' dimensions do not match the network's, the message window displayed in this case now provides the option: "No further messages of this priority during the procedure execution". **(12768)**

PrT Assignment:

- ✅ ICA, All-way Stop: Capacities are now determined correctly, when volumes at an arm are 0 (important for assignment with ICA). **(12855)**

- ✅ LUCE warm start, assignment with ICA: After a warm start of the LUCE assignment, the results produced differed significantly from the results calculated without a warm start. This error has been fixed. Since a warm start of the LUCE assignment within the assignment with ICA slowed down computing speed, this option is no longer available. **(12133)**

PuT Operating Indicators:

- ✅ Procedure has been sped up for multi-core use: The procedure 'PuT Operating Indicators' has been sped up for multi-core use. **(12858)**

Subnetwork Generator:

- ✅ During data transfer to the subnetwork, not all detector data was transferred. The assignment of detectors to lanes, nodes, main nodes and SCs was lost. This error has been fixed. **(12752)**

Timetable Editor:

- ✅ Moving stops in graphical timetable: If you applied one of the filters 'Hide selected stop events' or 'Hide stops without event' and stops were hidden, this caused faulty behavior of the graphical timetable when you moved stops to the right or below hidden stops. This error has been fixed. **(12737)**

VISUM Files:

- ✅ Passenger transfer flows in version files: The reading of transfer flow data in version files has been sped up. **(12800)**

- ✅ Reading in matrices: When you read in matrices via the procedure 'Open matrix', the run time had signficantly increased (compared to version 12.5) for cases where many reference objects of the matrix do not exist in the destination network. We therefore restored the old state. **(12850)**

⚠ Breaking Changes

PrT Assignment:

- ⚠ ICA, All-way Stop: Capacities are now determined correctly, when volumes at an arm are 0 (important for assignment with ICA). This allows for assignment results with ICA. **(12855)**

13.00-02 [80828]	2013-07-24

➕ New Features and Changes

Data Model:

- ➕ Has no opposing right of way: Nodes and main nodes now have a new attribute that specifies whether the node / main node has a non-opposing right of way or not. A decisive factor are the turn types between the legs of the major flow. **(12538)**

- ➕ Specific transfer walk times: The specific transfer walk times betwen transport systems and time profiles now have relations to the stop, the from and to transport system or the from and to time profile. **(12655)**

Dialogs:

- ➕ Entry of formulas: After using buttons to enter operands and binary operators +,-,*,/, the cursor is now positioned to the right of the operator. For parentheses and all operators containing parentheses, it is positioned between the opening and closing parenthesis. **(12692)**

Foreign Formats:

- ➕ Export of VDV-data: A new add-on module allows the export of public transport network and timetable-data in VDV452-format. With the exception of line blocks, all relevant data including line route polygons are exported. Optionally, data contained in user-defined attributes can be written to additional columns in the output. The functionality is also accessible through the COM interface. **(11394)**

Procedure Sequence:

- ➕ Display of current iteration: If a procedure sequence is carried out with a GOTO command, then the current iteration is now also displayed in the procedure status bar, together with the number of current procedure. **(12671)**

PrT Assignment:

- ➕ Assignment with ICA: The method assignment with ICA has been revised and improved, particularly in terms of accounting for blocking back/congestion. **(12572)**

PuT Line Blocking:

➕ (Minimum) Layover times: For a block element, you can now output the minimum layover time as well as the actual layover time, between the block element and its predecessor / successor, as an attribute. **(11235)**

✅ **Fixed Bugs**

Add-Ins:

✅ Missing Python installation: If there is an old version (2.5 or 2.6) of Python installed, and if the new Python engine 2.7 has not been installed during the installation of Visum 13, Visum crahed while trying to execute any of the Add-Ins. This bug has beend fixed. Now an error message is shown in this case. **(12787)**

COM Interface:

✅ AddBackground: This method now also works properly for .ecw files. **(12736)**

✅ Lists: Lists opened by a script during a procedure are now no longer empty, and they are updated in response to changes made in the network, as long as the script is still running. (This does not apply to lists that were opened prior to the execution of the script.) **(12063)**

Data model:

✅ Formulas and version comparison: If a formula contained an attribute of a version comparison with a loaded network, then the attribute ID could not be resolved. This error has been fixed. **(12809)**

✅ Aggregated analysis time intervals: If for an aggregated analysis time interval, analysis time intervals were combined whose start time lay more than 24h after the beginning of the calender period, then the aggregation results produced were incorrect. This error has been fixed. **(12740)**

✅ Assignment of link attributes, turn types, and node filter: The program no longer crashes when in the Network settings, you selected automatic calculation of turn types (one of the two variants) , set a node or main node filter, and used multi-edit on links to change attributes (e.g. number of lanes or transport system set), so that the turn types were completely changed. **(12759)**

✅ Delete couplings: The program no longer crashes when you delete couplings, with at least three time profiles coupled, and the coupling is not specified for all time profiles across the same vehicle course. **(12723)**

✅ Formula matrices: The program no longer crashes when for formula matrices, you change the network object reference type from "zones" to "No network reference". **(12733)**

✅ Formula with attributes containing multiple subattributes: The program no longer crashes when you enter a fomula with an attribute that contains multiple subattributes, and the first subattribute is not specified (e.g. '[VOLVEH_DSEG(,AP)]'). **(12734)**

✅ Link orientation "-": It is now no longer possible to enter an invalid orientation "-" in link lists. **(12682)**

✅ Multi-edit with invalid attribute values: The program no longer crashes when a set attribute (e.g. VSysSet) is assigned an invalid value via Multi-edit, and the prompt 'Still continue' that followed was answered with 'No'. **(12780)**

Dialogs:

✅ Edit formula: The program no longer crashes when for a formula (attribute or matrix) the (hidden) row end character is marked, and you click the '()' button to insert parentheses. **(12691)**

✅ Filter dialog for hierarchical filters: You can only successfully quit the dialog for hierarchical filters (stops, lines, PrT paths) if the settings made are correct. Previously, if the values entered were not consistent (e.g. min > max for value range), you could switch to the erroneous dialog, but no message indicating the cause was displayed. Now a message is shown in this case. **(12782)**

Filters:

✅ Conditions specified for set attributes: The program no longer crashes when a filter condition is specified for a set attribute (e.g. VSysSet oder VehCombSet), and one of the objects the set refers to (in our example a transport system or a vehicle combination) is deleted and you subsequently open the filter dialog. **(12779)**

Graphical procedures:

✅ PrT shortest path search: The program no longer crashes when you perform the PrT shortest path search and the target attribute for the route index does not exist. **(12746)**

Installation:

- Computer restart after update: You no longer need to restart your computer after an update. We also updated the codemeter version from 4.50b to 4.50c. **(12764)**

Listings:

- Aggregation functions: When you change the aggregation function of an aggregated list via the shortcut menu of a column header (e.g. from minimum to maximum), the data is now updated correctly (was previously not updated). **(12693)**

- Shape editing within lists: When in a list of digitized network objects (link, zone, line route, ...) you select an object, you can then press F5 or from the shortcut menu choose the corresponding entry to edit its shape. Now the Network Editor is brought to the foreground when you do so. If you then switch from the Network Editor window to a different window, the current shape editing process is canceled. **(12786)**

- Tooltip with multiple decimal places: Tooltips of list cells with floating-point numbers no longer display the number of decimal places exactly as in the cell, but they indicate at least 6 decimal places. **(12564)**

Main Window:

- 'Matrices' window: Keyboard entries (particularly 'Del'') now also work correctly in the 'Matrices' window and are no longer forwarded to other windows. **(12795)**

Miscellaneous:

- Fonts in user preferences: When you changed fonts in the user preferences, these were not immediately updated in lists, the junction editor, matrix editor, and the quick view, but only after you had restarted the program. This error has been fixed. **(12612)**

Procedure Sequence:

- Delete: You can now use the "Del" key again to delete procedures. **(12763)**

PrT Assignment:

- Assignment with ICA: If a warm start is possible, now no ICA assign data or assignments are intialized. Otherwise, ICA assign data and assignments are fully initialized. **(12707)**

- Blocking Back: During the assignment with ICA, the blocking back model was unnecessarily calculated twice at the end of the procedure. This error has been fixed. The fix only has an impact on runtime. It does not affect the results. **(12772)**

- ICA, signalized: The calculation of pedestrian factors has been corrected for traffic-actuated RBC. When you previously changed the stage durations during the calculation, the start times of vehicle signal groups changed, and these were not transferred to the pedestrian signal groups. **(12685)**

- ICA, two-way stop: A queue is now only output at major flows, if there are rank 2 turns with volumes. **(12767)**

- Paths not found in LUCE: In the LUCE assignment procedure, an error message is now output for relations for which no path is found, since the demand cannot be assigned. **(12762)**

PuT Line Blocking:

- Open blocks: In a special case where open blocks with a start and end should be generated in a depot, this depot had unlimited capacity, and a minimum dwell time was required, line blocking could not calculate a solution, although there was one. This error has been fixed. **(12673)**

PuT Operating Indicators:

- Sped up calculation: Calculation of the procedure 'PuT Operating Indicators' was again sped up for cases in which only few time profiles are active or no territory-based evalution is required. **(12731)**

Subnetwork Generator:

- Canceling: You can now cancel generating subnetworks when the paths are generated. **(11455)**

- Line routes: When during subnetwork generation a line route was cut off, and if this line route prior to adopting the section had a time profile item with an extremely large "To time profile" (e.g. 6,000,000 min), Visum crashed. This error has been fixed. **(12728)**

Timetable Editor:

- ✅ Line block view and open blocks: The program no longer crashes if in the line block view, there are open blocks of a line block version that accounts for preparation and post-preparation time. **(12732)**

- ✅ Stop point selection: If a vehicle journey had a time profile in which the same stop occurred several times and you opened the list boxes for stop point selection, the list always showed the last stop point, instead of the stop point selected. This error has been fixed. **(10779)**

VISUM Files:

- ✅ Log file: When in the Windows Explorer you used the shortcut menu to open a version file, the log file was named log.txt instead of protocol.txt. This error has been fixed. **(12628)**

- ✅ Procedure parameters: When you load procedure parameter files, values such as tCur and impedance (that depend on your procedure parameter settings) are now updated. **(12726)**

⊘ Breaking Changes

Data Model:

- 🔴 Has no opposing right of way: Nodes and main nodes now have a new attribute that specifies whether the node / main node has a non-opposing right of way or not. A decisive factor are the turn types between the legs of the major flow. This change further leads to other results of ICS calculation at nodes without opposite main flows whose turns are opened, but whose lane turns are not. **(12538)**

PrT Assignment:

- 🔴 Assignment with ICA: The method assignment with ICA has been revised and improved, particularly in terms of accounting for blocking back/congestion. This will lead to changes in the procedure results. **(12572)**

- 🔴 ICA, signalized: The calculation of pedestrian factors has been corrected for traffic-actuated RBC. This will lead to different results for the assignment with ICA, if you are using traffic-actuated RBC. **(12685)**

PuT Line Blocking:

- 🔴 Open blocks: In a special case where open blocks with a start and end should be generated in a depot, this depot had unlimited capacity, and a minimum dwell time was required, line blocking could not find a solution, although there was one. This error has been fixed. The fix also affects other results, as in certain cases now different but equivalent solutions are found. **(12673)**

13.00-01 [80441]	2013-07-05

⊕ New Features and Changes

Data Model:

- ⊕ Time profile item relation -> Vehicle journey item: Evaluation of the time profile item relation by vehicle journey item has been sped up. **(12541)**

Dialogs:

- ⊕ Graphic parameters: In dialogs for editing graphic parameters, the header now indicates what area the parameters refer to. Example: "Edit graphic parameters: Network Editor". **(11973)**

Foreign Formats:

- ⊕ VDV452 import: For VDV452 import, 12-digit version numbers are now permitted in order to accommodate the particulars of supplying systems, even if the format provides for a 9-digit number. **(12641)**

Graphical procedures:

- ⊕ Adding flow bundle terms: The process for adding new terms to a flow bundle has been simplified and is now more logic. When adding new terms, no more dialogs are displayed, but default settings are used for traffic types, similar to as for some network object types. When you add zones, for the first zone of a group, the default traffic type is 'Origin demand'. For the second zone, it is 'Destination demand'. Adding additional zones is still not permitted. The COM methods for adding flow bundle terms have not been changed. **(12588)**

Graphics:

- ⊕ Background maps: The background maps have been rounded off with several smaller improvements. In particular, the map is now also drawn, if there are invalid sections in the visible section. **(12517)**

- Dynamic legend entries: The new legend now responds to changes of dynamic entries (particularly of the POI categories) by updating the names of the legend items. **(12603)**

Installation:

- Codemeter 4.50b: This service pack (and all future ones) require Codemeter version 4.50b or higher. Local dongle drivers are updated automatically during the update process. If network dongles are used on remote computers, the Codemeter runtime software has to be updated on the licence server as well. **(12681)**

Network Editor:

- Inserting a stop point: When you insert a stop point, a stop and a stop area are also inserted. Then a type number is entered for the stop point (analogous to code and name), which is also adopted for the stop area and the stop. **(12598)**

PrT Assignment:

- ICA, two-way stop: The impact of flared approaches is now accounted for in the calculation. **(12206)**

- Two-way nodes: Within ICA calculation, for node impedance calculation according to HCM 2000 or HCM 2010, the 'two-stage gap acceptance' method is provided for two-way nodes. **(12278)**

PuT Operating Indicators:

- Speed-up for 'only active': The procedure 'PuT operating indicators' has been sped up further for cases in which there are many vehicle journey sections, but only few active ones, and you want to use the active vehicle journey sections only. **(12647)**

Scenario Mangement:

- Tables in the 'Edit Project' dialog: Tables can now be sorted by any column. You can also use the copy and paste commands for the 'Procedure parameter set' column in the 'Scenarios' dialog. **(11329)**

TFlowFuzzy:

- Display of network objects affected: In the Message window, you can now highlight network objects for which messages are generated during 'Demand matrix correction (TFlowFuzzy)' or the analysis. **(12284)**

VISUM Files, Scenario Management:

- Matrices within model transfer files: Creation of model transfer files has been sped up in the case that identical matrices exist in both networks. This is particularly useful when editing modifications in the context of scenario management. **(12112)**

✓ Fixed Bugs

Add-Ins:

- Buffers around PuT lines: The program no longer crashes when you carry out the add-in 'Buffers around PuT lines' and the name of one of the lines or line routes contains a special character. **(12620)**

- Coordinates in VDV452 import: During VDV452 import, coordinates are now converted correctly from degrees into decimals, as commonly used in PTV Visum. **(12639)**

- Import Transit Supply: When you import supply data via the 'Import Transit Supply' add-in, now also allocations between transport systems are suggested, whose codes only differ in upper and lower case letters. **(12522)**

- Nested Demand Model: The add-in 'Nested Demand Model' can now also be used with Visum 13. **(12567)**

COM Interface:

- SetMultiAttValues and variants: The method SetMultiAttValues and its variants SetMulti of the VisumPy library did not work for the network objects matrix toll, OD pairs, and main zone paris. This error has been fixed. **(12606)**

Data Model, Other procedures:

- ✓ Different territory indicators: For the attributes Passengers boarding, Passengers alighting, Passengers transferring, Vehicle hours traveled, Vehicle kilometers traveled, and Mean volume per Trip (each per territory), the indication of source has been corrected. In addition, now the number of passengers boarding, alighting and transferring within the territory are also calculated via the procedure 'PuT operating indicators', if you select the option 'Also calculate indicators of the 'Territory indicators' procedure'. **(11818)**

Data Model:

- ✓ Attribute destination demand at main zone: Evaluation of the attribute 'destination demand-DSeg at main zone' has been signficantly sped up. **(12491)**

- ✓ Editing vertices: When you deleted vertices of a toll system that were also used by the polygon of a main node, Visum could freeze. This error has been fixed. **(12686)**

- ✓ Formula attributes: In formula attributes with the operator Round(x,p), operator x was not evaluated, but p was rounded to p places. This error has been fixed. Formula matrices are not affected thereof. **(12688)**

Demand procedures:

- ✓ Formula matrices in utility definitions: So far you could enter formula matrices in the utitility definitions of various demand procedures, but they were deleted when you read in procedure parameters from files (Version file, procedure parameters binary and XML). This is no longer the case, i.e. formula matrices can now be used in utility definitions without any limitations. Demand matrices are no longer deleted from utility definitions, but they are not offered for insertion either. Should you wish to use them, change the formula accordingly. **(12397)**

Dialogs:

- ✓ Attribute selection: Setting of the C/A/H sorting switch is no longer lost during the session. **(12608)**

- ✓ Editing a non-numeric classification: If in the Graphic Parameters dialog for bars of a network object type, on the dialog side for network object selection (e.g. 'Link selection'), the option 'Bars only on selected links' was activated and a non-numeric attribute selected, Visum crashed when you clicked 'Edit'. This error has been fixed. **(12679)**

- ✓ Ending a search: If you clicked the 'Stop search' button to cancel a search that had already been ended, the search results were deleted. This error has been fixed. **(12611)**

- ✓ Graphic parameters, bar labeling: If for bar labeling, you select 'Sum only', the setting 'Color like bar' does not make any sense and is thus no longer offered in the dialog. **(12503)**

- ✓ Network statistics: In the network statistics, line data and main line data were mixed up. This error has been fixed. **(12637)**

- ✓ Parameters for volume-delay function: The program no longer crashes when in the dialog 'Volume-delay function parameters', 0 is entered as the volume-delay function number. **(12597)**

- ✓ Position outside the screen: When dialogs are opened, it is now checked whether their position saved during the last session lay outside the screen. If this is the case, the position saved is discarded and the dialog is opened and displayed at its initial position. **(12220)**

- ✓ Search dialog: After you restored the search dialog from a version file, the results list was initially empty until the search was started again. This error has been fixed. **(12610)**

- ✓ Search dialog: The column widths of the table are saved per network object type and are restored when reopened. **(12609)**

Filters:

- ✓ Line filters and couplings: The line filter was not always fully updated when you created or deleted couplings. This error has been fixed. **(12539)**

Foreign formats:

- ✓ VDV452 import: Relations between data records in VDV452 data, partly specified with leading zeros, could not be resolved when read in. This was particularly true for line numbers wih leading zeros. This error has been fixed. **(12683)**

- ✓ Internet maps: You can now read in Internet maps, even if the project directory has been changed. **(11065)**

Graphical procedures:

- ✅ Canceling flow bundle calculation: It is now possible to cancel flow bundle calculation again. **(12636)**

- ✅ Flow bundle and toll systems: When you calculated the flow bundle volume for toll systems, the corresponding value was not initialized, i.e. the result was always added to the existing value. This error has been fixed. **(12621)**

- ✅ Supply selection with flow bundle terms: For some flow bundle terms, the 'Supply' tab did not respond to changes made in the 'Passenger types' tab. Now - depending on the passenger types selected - the left or the right half of the 'Supply' tab becomes inactive again. **(12602)**

Graphics:

- ✅ Autotexts when printing lists: In Version files of previous Visum versions, autotexts in print frames of lists were not always recognized as such. As a result, text was displayed (e.g. 'Page [page number] / [number of pages]' instead of 'Page 17 / 35'). This error has been fixed. **(12605)**

- ✅ Background maps: No more crash due to lack of memory if the 'intensity' value within the graphic parameters of background maps is set to a value different from 100%. **(12724)**

- ✅ Background maps: Online background maps used as usual background appear to be completely black since service pack Visum 12.52-14. This problem occurs in 32bit program version only and has been fixed now. **(12729)**

- ✅ Bar labeling in the 'Sum only' mode: When you used 'Sum only' as the bar label, the option 'Do not show if value <= X' did not work properly. Now a value is no longer displayed, if the sums of the individual bars lie under their respective threshold (there is no common sum threshold). **(12502)**

- ✅ Double spaced footer in print frame: In print frames with a double spaced footer, the footer was not displayed correctly. This error has been fixed. **(12684)**

- ✅ Drawing bars using rounded values: The value set for a bar in the 'Round to' attribute was always interpreted metrically and the lengths were specified in [m]. Now the "Long length" attributes are rounded to [km]. Imperial units are rounded accordingly to multiples of the applicable unit of measure. **(12324)**

- ✅ Legend with images: The program no longer crashes when opening a version file with a legend that contains autotexts with references to images and the image files cannot be loaded. **(12554)**

- ✅ Printing after changing projection: When you transformed a network into another coordinate system and afterwards printed the entire network, the section was wrong. This error has been fixed. **(12616)**

Junction Editor:

- ✅ Allocating SC of the type VISSIG: The program no longer crashes when in the Junction Editor, you create a SC of the type VISSIG, for which a node has already been supplied or for which there is no node. **(12638)**

- ✅ Signal program of VISSIG controllers: In the Junction Editor and in the 'Edit SC' dialog, the option 'no signal program' is no longer available for the signal program of VISSIG signal controls (SC), as it no longer represents a valid status. You can model switching of the SC via the 'Switched off' attribute. **(12584)**

Main Window:

- ✅ Opening graphic parameters via Ctrl + G: In windows that have their own graphic parameters, the short key combination Ctrl + G will now open their graphic parameters dialog. If no window, or one of the tool windows is active ('Network objects', 'Matrices', 'Find',...), Ctrl + G will open the graphic parameters dialog of the active window. **(11658)**

- ✅ Shortcuts with 'ALT': When views with a grid (list, Quick view, procedure sequence, ...) had the focus, shortcuts with the 'ALT' key (e.g. ALT + F4 to quit the program) did not work properly. This error has been fixed. **(12826)**

Matrix Editor:

- ✅ Binary arithmetic operations with an external matrix: For binary arithmetic operations (adding, multiplying, etc.), you can now, via file selection, choose an external matrix again as a second operand. **(12607)**

Network comparisons:

- ✅ Model transfer file view: If in the model transfer file view, you collapse a node in the tree, the latter is no longer selected. In particular when you activate synchronization, the network objects (after collapsing their tree view) are then no longer highlighted in the Network Editor. **(12500)**

✓ Suppressing messages: When creating the network merge mode, you can now suppress further messages of the same priority. Messages that are generated when you read in version files must be suppressed separately. **(12591)**

Network Editor:

✓ Delete enclaves: The special multi-edit command 'Delete enclaves' did not work for area objects. This error has been fixed. **(12596)**

✓ Display when editing shape of line route: If you edited the shape of a line route and then clicked Undo, the previous route was highlighted in yellow again, but so was the route edited before the Undo operation. This error has been fixed. **(12626)**

✓ Network check - suitability for ICA: The check for ICA suitability via the 'Network check' function is now only performed for nodes with the ICA calculation method. **(12555)**

✓ Shortening line route via multiple traversed stop points: When you shortened a line route of the course A-B-C-B-C-D with a fixed second traverse of C, so that the second traverse of C became the new starting point, the detour to B remained part of the course (C-B-C-D instead of C-D), if the first occurence of stop point C was a route point and the second was not. This error has been fixed. **(12079)**

Other procedures:

✓ 'Initialize all filter settings' procedure: During the 'Initialize all filters' procedure, the POI filter was not initialized. This error has been fixed. **(12546)**

✓ 'Territory indicators' procedure: When you now calculate the vehicle hours for territories, run times on main turns are also taken into account. **(12586)**

✓ Emission calculation according to HBEFA manual: When you performed an HBEFA emission calculation multiple times during a VISUM session, after 254 times, the files could no longer be opened and the calculation could not be performed. This error has been fixed. **(12648)**

PrT Assignment:

✓ Two-way stop, queue lengths: Queue lengths were wrongly output at rank 1 turns, if the leg had no rank 2 turn. If the rank 2 turn shared a lane with a rank 1 turn, and there were also other lanes, the queue length output at the rank 1 turn was far too long. **(12630)**

PuT Assignment:

✓ Headway in headway-based assignment longer than 2 hours: If in headway-based assignment, you only accounted for active time profiles, a filter was set, and the headways were adopted from a time profile attribute, the following message: 'There is an average headway of more than 2 hours.' was not always displayed. This error has been fixed. **(12680)**

PuT Line Blocking:

✓ Open blocks: If during line blocking open blocks were generated and the link run time t-PuTSys for the transport system used was always 0, Visum could enter an infinite loop. This error has been fixed. **(12593)**

Scenario Management:

✓ Long paths: The program no longer crashes after performing a scenario calculation when the path to the basic project folder is too long. **(12601)**

Scenbario Management:

✓ Remove computation node: No more crash when removing a computation node, if its status is being updated at the same time. **(12642)**

Timetable Editor:

✓ Scrollbar in tabular timetable: The scrollbar in the bottom left quadrant of the tabular Timetable Editor now allows you to scroll, if the total column widths exceed the quadrant's width. **(11190)**

✓ Timetable Editor opened for line selection: When the Timetable Editor was opened for an extensive selection of lines, a warning was displayed that the calculation of the stop sequence might take quite some time. Now the Timetable Editor is no longer opened. You can change the number of selected lines / line routes in the Network Editor. **(11290)**

VISUM Files:

- ✅ Canceling read network: The program no longer crashes after you cancel non-additive reading of a network file, a demand file or a model transfer file. **(12595)**
- ✅ Reading version file: Reading a version file failed, when you mistakenly assigned a PrT mode more than one transport system and the file contained assignment results. This error has been fixed. **(12656)**
- ✅ Write version / RBC: In certain cases, networks containing RBC controllers could not be saved and Visum crashed. This error has been fixed. **(12559)**

⛔ Breaking Changes

Installation:

- ⛔ Codemeter 4.50b: This service pack (and all future ones) require Codemeter version 4.50b or higher. Local dongle drivers are updated automatically during the update process. If network dongles are used on remote computers, the Codemeter runtime software has to be updated on the licence server as well. **(12681)**

Other procedures:

- ⛔ 'Territory indicators' procedure: When you now calculate the vehicle hours for territories, run times on main turns are also taken into account. For networks that include main turns, this changes the results accordingly. **(12586)**

13.00-00 [80106]	2013-06-21

➕ New Features and Changes

Add-Ins:

- ➕ A new Add-in for the creation of reports for highway validation has been added. The Add-In can be inserted into the procedure flow and generates an Excel-sheet with comparisons of surveyed and calculated values. You can define thresholds and results can be displayed with different charts. **(11365)**
- ➕ A new Add-in for the creation of reports for public transport validation has been added. The Add-In can be inserted into the procedure flow and generates an Excel-sheet with comparisons of surveyed and calculated values. You can define thresholds and results can be displayed with different charts. **(12169)**
- ➕ General: The Python library numpy which is deployed with Visum was updated and exchanged with a version optimized for the Intel Math Kernel Library MKL. This should result in faster operation of Add-Ins making use of numpy (e.g. CalculateMatrix), but can eventually also lead to deviating results. **(11379)**
- ➕ In addition to the assignment report for highway there is now an Add-in for the generation of assignment reports for public transport.The Add-in can be implemented into the procedure and produces an Excel file and/or a PDF document that contains a summary of assignment results. **(10800)**
- ➕ Message handling: The Add-Ins included in the standard installation have been adpated to the new COM-methods (11175). Thus procedure runs will be stopped, if an error occurs. **(12427)**

COM Interface:

- ➕ Mapmatcher: It is now possible to define the relevant attributes of links and turns for the shortest path search within the mapmatcher. So far, only the shortest path (lengths of links) was available. **(12148)**
- ➕ Scripts and Add-Ins can now send (optionally) errors to the procedure run using new COM-methods (IVisum: PostOperationResultMessage, PostFailure, PostUserCancelled, Log, Ask). Thereby it can be avoided that the full procedure run is exectued unintendly. **(11175)**
- ➕ Standard values of links: There is now a COM method 'SetDefaultsFromLinkType', which applies standard values to links. With this, it is among other things possible to set standard values within a procedure flow by incorporating a brief COM-script into the procedure flow. **(11137)**

Data model:

- ➕ Attributes for Line block items: Reading in of attribute files for block items is possible now. **(7864)**
- ➕ Relation Nodes on Vehicle journey: For object Vehicle journey there is a relation to object Nodes. This can be used e.g. to set a filter for traversed nodes. **(10704)**
- ➕ Control of channelized right turns: The data model has been extended by the value "without" for the leg attribut channelized control. **(12419)**

- Formulas: The possibilities to define formulas have been extended. Now it is possible to apply binary and unary operators as well as transformations and to insert parentheses to the formula. This new definiton of formulas is available for the definition of matrices and attributes with formulas and in the procedures 'Combination of matrices and vectors' and 'Edit attribute'.
  In the COM-interface, the objects ILinCombPara representing parameters of the procedure "Linear combination of matrices and vectors" and IEditAttributePara representing the parameters of the procedure "Edit attribute" were removed. They are replaced by the new objects IMatrixFormulaPara and IAttributeFormulaPara, respectively. **(10243)**

- Territories and POI with surfaces can now be aggregated. Generally, this functionality can be used for all marked or active objects with surfaces. **(11584)**

- The list 'Transfer and walktimes within stop' has an additional attribute 'Direct Distance' **(10206)**

- The PuT path legs list contains a new relation to vehicle journey items. This allows access to all elements between the Start time profile item and End time profile item. **(11694)**

- There are new relations for vehicle journey items which enable access to attributes of the previous and next vehicle journey item. **(11473)**

- When copying line routes with coupling sections, warnings will be generated. **(11389)**

Demand Procedures:

- Tour-based model: It is now possible to define function type and parameters of the distribution utility for each combination of person group and activity (and mode) independently. **(12098)**

- Tour-based model: It is now possible to define function type and parameters of the mode choice utility for each combination of person group and mode (and activity) independently. **(12097)**

- Trip distribution: The trip distribution of the 4step-model is now multi-threaded. **(11978)**

Dialogs:

- By default the Tab Multiple in the Edit line route dialog shows all time profiles. This is also the case when adding new time profiles in the dialog. **(11023)**

- Optionally, meaningful default class limits for the classified display are provided if the attributes have a restriced value range (type: enum, bool, string). **(9214)**

- The setting of default values for user-defined attributes of type bool has been improved. **(12101)**

- The Tabs PrT-TSys and PuT-TSys of the link dialog have been improved. **(11731)**

- User-defined-attributes: When adding new user-defined attributes, Visum automatically fills the Code and Name from the field AttID, if the target fields are empty. **(10434)**

Filters:

- Empty values: With the filter operation "Is Empty" it is possible to filter empty values in user-defined attributes. **(11480)**

- Filter dialogue: One or several filter conditions can be duplicated **(9643)**

Foreign formats:

- OpenStreetMap: The memory consumption during import of OpenStreetMap files was reduced, allowing larger input files to be processed **(12253)**

- Import of VDV-data: A new add-on module allows the import of public transport network and timetable-data provided in VDV452-format. With the exception of line blocks, all relevant data including line route polygons are converted to the respective Visum-objects. Existing additional data columns are imported to user-defined attributes. The functionality is also accessible through the COM interface. **(11393)**

- OpenStreetMap: The importer for OpenStreetMap-data has been extended. It is now possible to import data related to Public Transport (stops, railway tracks and line routes), Barriers and arbitrary other (points, areas) as POIs. Due to the changes, minor modifications may be required for existing user defined import configurations. **(11439)**

Graphical Procedures:

- The supply filter for stops in the flow bundle has been improved. For both columns it has been clarified to which passenger types the supply applies. The improvement also offers new options for filter definitions. **(11568)**

- When calculating PrT isochrones it is now possible to limit the search to a maximum value which applies to the selected route choice criterion. If this value is reached and the unlimited search deactivated, the shortest path search is aborted, i.e. paths beyond the maximum value are not considered. **(12131)**

Graphics:
- Background maps: Now internet maps (Bing, WMS, OpenStreetMap) can not only be downloaded as a static map, but also embedded as a live background map. When the map is activated, it automatically loads the correponding image section and updates automatically when zooming or panning. **(11438)**
- Scaling of Text object: When inserting a Text object, until now you could define a fix size which remains the same when zooming in and out. Now there is the option to relate the size to the network coordinates. The text size are scaling now when zooming, the size stays the same related to the network. **(11579)**
- The dialog of the legend of the network editor has been modernised, e.g. now the manifold options are clearly arranged in different tabs of the dialog. **(11220)**
- There is a new option for the display of bar labels to avoid overlapping when drawing. Additionally, the visibility of the bar labels can be adjusted using corresponding options. **(2502)**
- Transfer display of regular services: Bars can be displayed depending on the marking of service groups. Three different drawing modes are available. **(11537)**
- Transfer display of regular services: The display of the transfer and walk times (out ring) can now be switched off in the graphic parameters of the transfer display of regular services. **(11535)**

Junction editor:
- When a version file is saved with an open junction editor view, the node in the junction editor is restored when the version file is opened. **(11302)**

Main Window:
- A new view showing messages of different priorities has been introduced. Like other views the message window offers the standard functionlity of synchronisation, which allows easily errors and warnings to be analysed. **(7177)**
- All active procedures in the procedure sequence can now be started using a start-icon in the main toolbar without having to open the procedure sequence . **(9543)**
- For reasons of standardization some entries in the menus for lists, the time space diagrams, matrix editor and matrix histograms have been renamed. **(12209)**
- List menu: The list menu has been reorganized. One aspect was to reduce the length of the menu to ensure the usability also on small screens. Second aspect was to adapt the menu to the corresponding menu in PTV Vissim 6. **(11853)**
- Search Function: The functionality has been improved significantly. It is now possible to search in any and also in several attributes simultaneously. The search window, which can be docked in the main window, includes a list of search results **(7513)**
- The menu Extras has been removed. The dialog Program status was renamed to Network statistics and can be found under menu Network. The log files can be accessed under menu File -> Show log files. The license dialog can be found in the menu Help. **(12293)**
- The toolbar 'Spatial Selection' is now docked to the network editor instead of the main window, as most operations relate to the network editor. **(12225)**
- Window docking: All tool windows (e.g. 'Network', 'Quick view') can now be docked also at the bottom and top of the main window. This is in particular attractive for the new view 'messages.' **(12488)**

Matrix editor:
- It is now possible to export matrices to a data base from the list view in the matrix editor. **(10821)**

Miscellaneous:
- A default can now be defined for the direction of traffic for new networks. **(12281)**

- Changes to naming, installation folders and documentation: The installation folders and shortcuts have been unified among the different applications belonging to the PTV Vision Suite. All shortcuts are now by default placed in a group/start menu folder named *PTV Vision 2013* and are stripped to integer version numbers (PTV Visum 13). Also the installation folders and the locations for user-specific files have been adapted and unified in this manner. Thereby, log files, projection files, configurations for the OpenStreetMap-Importer etc. are now located at *%AppData%\PTV Vision\PTV Visum 13*.
  All demo networks, examples and tutorials are now installed separately in a folder *PTV Vision\PTV Visum 13* which is located below *Users\Public\Documents*, which contains data shared among all users of the system. This allow the examples and tutorials to be modified in place without the need to copy them to an editable location first.
  The COM documentation has been reorganized. The COM interface reference is now included with the Online Help in the common help format and now also includes information about attributes and relations of the network objects. The other parts of the former COM documentation are available in the document *C:\Users\Public\Documents\PTV Vision\PTV Visum 13\COM\Introduction to the PTV Visum COM-API.pdf* **(11347)**

- Python-Support: Visum now likewise uses Python 2.7 on all platforms (instead of Python 2.5 on 32-Bit and Python 2.6 on 64-Bit as before) for the execution of Add-Ins and other Python scripts. The Python libraries (numpy, wx,...) were updated to up-to-date versions for Python 2.7. **(11380)**

- The COM-reference has been incorporated into the online help and now also covers attributes and relationships of the network objects. **(11787)**

- The menu ? was renamed to "Hilfe" in the German version. **(12204)**

- The menu entry Options has been renamed to User preferences and can be found in the Edit menu. The entry Network parameters has been renamed to Network settings. **(12294)**

- Windows 8: PTV Visum 13 was prepared for operation with Windows 8. Due to the missing start menu in Windows 8, all of the start menu shortcuts to examples and documents which used to be created in the installation process were replaced by internal shortcuts accessible through the Help-menu. The only remaining shortcuts are those to the Visum executable and to the Scenario calculation server. These are grouped together with shortcuts to other PTV Vision applications in the group 'PTV Vision 2013'. Furthermore, the CodeMeter runtime shipped with Visum was upgraded to version 4.5 which is the first release providing support for Windows 8. All these changes not only apply to Windows 8 installations, but are effective on older platforms as well. **(11545)**

Network comparisons:

- Display percental deviations: Percental deviations with a value of 0 as denominator are considered as infinite valaues and are displayed with maximum bar width. In lists etc. they are represented as MIN or MAX. **(9325)**

Network editor:

- Interaction modes: When changing between different interaction modes in the network editor (adding, spatial selection, zooming, Flow Bundle, Shortest Path Search,...), users could end up in confusing and inconsistent states. The management of these interaction modes was refurbished and now falls back to the previous mode when an activity is stopped. The title bar of the network editor window informs about the current mode (e.g. Edit:Nodes). Furthermore, the dialogs of the graphical tools (Flow bundle, Shortest Path Search, Isochrones, Turn Volumes, Desire Lines, Path Projections) where replaced by a single dockable tool window and their layout was optimized for vertical display besides the network editor window. **(4819)**

- Valid days which include the same days can now be combined to one valid day. **(12279)**

- Edit shape of line routes: There is a new function 'Fix all profile points', which makes it easier to avoid unintentional deleting of profile points from line routes. **(10890)**

- Edit Shape: Editing shapes of area objects works now smoother also in case of very high number of area objects in the network. **(11096)**

- Fuzzy surface alignment: There is now a function to align surface borders, which do not match perfectly. This function is available special function of area objects, during the shapefile import, via COM and in the network settings. **(11585)**

- Redirect links: It is now possible to change from- and to-node of an existing link. **(11566)**

- The context menu of lines contains a new entry that enables the disaggregation of lines. **(11570)**

- The context menu of lines has a new entry which allows coupling sections to be deleted. **(11581)**

⊕ The dialog for lines and line routes, respectively, has been extended by the column 'In selection'. **(11580)**

⊕ The function 'Normalize Surfaces' is now available for selected polygons, either via special function at all network objects and in the 'Network settings' under 'Surfaces'. **(11586)**

⊕ The options for line aggregation have been extended. **(11569)**

Other Procedures:

⊕ Blocking back calculation: The formula for the calculation of the average waiting time has been changed. The average waiting time is the total waiting time divided by the effective capacity of the link. **(12128)**

⊕ Calculate service trip patterns: An extension of this function enables the entry of a lower boundary as base frequency. **(12347)**

⊕ Run script: Optionally, it is possible to save Python script code in the procedures and execute this as script. **(3701)**

⊕ Signal offset analysis: When executing the procedure the dialog is now reporting the progress. **(11208)**

⊕ The procedure 'Edit Attribute' can now also edit attributes of the network. **(11630)**

PrT Assignment:

⊕ Assignment with ICA: The assignment method has been revised and improved. Especially, the effects of blocking back are better replicated. **(10239)**

⊕ ICA calculation: The attribute "ICA upstream adjustment" is now an attribute of the turn. The value range of the turn attribute is restricted to [0.09; 1.0]. **(12423)**

⊕ ICA, average back of queue: The turn attribute 'ICA average back of queue' is calculated now also for nodes with the control type All-way Stop, two-way yield, two-way stop and roundabout (HCM). Additionally, if the turn volume at a two-way yield node has the volume 0, the queue length is set to 0. **(12537)**

⊕ ICA, signalized: The base saturation flow can now be edited globally for ICU 1 & ICU 2 methodologies in the general procedure settings. **(12424)**

⊕ ICA, signalized: The factor f_bb (attribute of the leg) was replaced by an attributes for the definition of the local bus stopping rate. **(12336)**

⊕ ICA, signalized: The factor f_p (attribute of the leg) was replaced by attributes for the definition of the number of parking movements on the left and right side of the street. **(12337)**

⊕ ICA, two-way control: The ICA calculation for two-way controlled nodes takes the leg attribute value for channelized control according to the HCM into account. **(12313)**

PuT assignment:

⊕ The connection file now contains an identification-string. **(12218)**

⊕ Headway-based assignment: Time profiles without service trips are ignored in the route search and choice if the automatic headway calculation is used. **(11902)**

⊕ The calculation of fares has been internally improved. This has positive effects on run times of all procedures using the fare calculation such as assignment or line cost calcuation. **(11992)**

⊕ The scaling of the timetable-based assignment has been improved. The improvement becomes effective when many cores are used. **(11567)**

PuT Line blocking:

⊕ Timetable optimization: By the entry of negative layover times Visum can indicate possible optimizations of the timetable. **(11780)**

⊕ Interpretation of pre and post preparation times: Pre and post preparation times (layover times) are in practice not always considered as fix. An extension enables an interpretation as "soft" in order to find a balance between shortfall of minimum layover times and number of required vehicles. **(11351)**

⊕ The procedure line blocking with vehicle interchange runs faster now. **(12146)**

PuT Operating Indicators:

⊕ Optionally, the number of service trips can be calculated for turns and main turns, respectively. **(2696)**

⊕ The procedure PuT Operating Indicators is now multi-threaded. **(11571)**

PuT Passenger Survey:

- ⊕ Plausibilization of survey data: The options for the search of the preceding and succeeding lines, respectively, have been extended. **(10386)**

Scenario Management:

- ⊕ Distribution of calculation to several computers. This module enables the calculation of scenarios to several computers (computation nodes) which are in one network. All available computers are identified automatically and listed. The scenarios to be calculated can now be assigned to the computation nodes individulaay. The data are transfered to the computation nodes and calculation started. Optionally the calculated results can be transferred back to the origin maschine. **(11435)**

- ⊕ Network comparisons: The second operation mode of comparing versions, in which the comparison versions stays opened in the background (new in Visum 12.5) is now also available in the version comparison in the scenario mangagement. **(11188)**

- ⊕ The file extension .vpdb is now automatically linked to Visum, i.e. double click on a .vpdb file opens Visum. **(11512)**

- ⊕ When comparing scenarios the name 'This network' is now replaced by the code of the leading scenario. **(10317)**

Schematic line diagram:

- ⊕ Bundling edges: In addition to the option to couple edges manually there are several new options. They are:
  - Edges are bundled for equal selected attributes
  - Edges are bundled for same regular service pattern
  The option "Bundle coupled edges" can now be limited to selected edges. **(11634)**

- ⊕ Differentiation of labelling of 2-hourly displays. The schematic line diagram has the capability of hourly or 2-hourly displays. For the differentiation of desired displays (such as arrival and departure times) it needs a more sophisticated labelling system. This is done by an extension of the graphic parameter settings. **(11562)**

- ⊕ Display of edges according to defined time frames. The options for the display of edges is extended by the option to define time frames. The vehicles journeys are not filtered, but the edges are not displayed when a vehicle journey is outside the defined time frame. This is useful in particular for long-distance journeys where edges are cut which are outside the time frame. **(11564)**

- ⊕ Edges inside transfer nodes. Edges can now be edited within a transfer node. The edge can have any shape as long as it is inside the transfer node. **(11559)**

- ⊕ When closing a schematic line diagram Visum now saves the layout and prahic parameters internally and offers to apply them, when opening new schematic line diagram view is opened. **(11558)**

Subnetwork Generator:

- ⊕ The settings of the sub network generator can now be saved to an .xml file. **(9298)**

Timetable editor:

- ⊕ Display classic stop sequence: Display has been enhanced by the option to define preferred stops. **(12326)**

- ⊕ Find line block item: In the 'Block view PuT line blocks' there is now a dedicated dialog to find line block items. **(12412)**

VISUM files:

- ⊕ The names of the output files have been changed from log.txt into protocol.txt and message.txt into messages.txt. **(12315)**

- ⊕ In the ANM Export the attribute 'ReducedSpeed' in the ANM file can be mapped to an attribute of lane turns. The value of the attribute is the speed, that is used for the generation of reduced speed areas. Negative values prevent the automatic generation of reduced speed areas. **(11233)**

- ⊕ Optionally, numbers with decimal places can now be saved with up to 12 decimal places in files of type .net, .dmd, and .tra. **(10742)**

- ⊕ The calcualtion of a sub network and the ANM Export can be done in one step. Optionally, a PrT assignment can be executed in the sub network and the files can be imported into Vissim. **(10198)**

❗ **Breaking Changes**

Add-Ins:

🔴 General: The Python library numpy which is deployed with Visum was updated and exchanged with a version optimized for the Intel Math Kernel Library MKL. This should result in faster operation of Add-Ins making use of numpy (e.g. CalculateMatrix), but can eventually also lead to deviating results. **(11379)**

🔴 Message handling: The Add-Ins included in the standard installation have been adpated to the new COM-methods (11175). Thus procedure runs will be stopped, if an error occurs during the Add-in execution. **(12427)**

COM:

🔴 The COM-method Visum.Net.GraphicParameters.UpdateGU has lost its function and was removed. **(11798)**

Data model:

🔴 Attribute "Vistro Share HGV": The attribute 'Vistro Share HGV' for Turns and Main Turns was renamed to "Share HGV". The turn attribute is no used in ICA calculations instead of the also existing link attribute "Share HGV". This may change results of ICA calculations. **(12307)**

🔴 Formulas:
The possibilities to define formulas have been extended. In the COM-interface, the objects ILinCombPara representing parameters of the procedure "Linear combination of matrices and vectors" and IEditAttributePara representing the parameters of the procedure "Edit attribute" were removed. They are replaced by the new objects IMatrixFormulaPara and IAttributeFormulaPara, respectively. **(10243)**

Demand procedures:

🔴 Gravity models: The computation of doubly constrained gravity models (e.g. used in trip distribution or interactively in 'Projection/Projection by Territory' in the matrix editor) internally used wrong matrix sums. This was fixed. Due to the change, diverging results may occur in certain demand models. **(12178)**

Main Window:

🔴 The menu Extras has been removed. The dialog Program status was renamed to Network statistics and can be found under menu Network. The log files can be accessed under menu File -> Show log files. The license dialog can be found in the menu Help. **(12293)**

Miscellaneous:

🔴 Changes to naming and installation folders: The installation folders and shortcuts have been unified among the different applications belonging to the PTV Vision Suite. All shortcuts are now by default placed in a group/start menu folder named *PTV Vision 2013* and are stripped to integer version numbers (PTV Visum 13). Also the installation folders and the locations for user-specific files have been adapted and unified in this manner. Thereby, log files, projection files, configurations for the OpenStreetMap-Importer etc. are now located at *%AppData%\PTV Vision\PTV Visum 13*. Scripts, making assumptions about these folders need to be adapted. **(11347)**

🔴 Python-Support: Visum now likewise uses Python 2.7 on all platforms (instead of Python 2.5 on 32-Bit and Python 2.6 on 64-Bit as before) for the execution of Add-Ins and other Python scripts. The Python libraries (numpy, wx,...) were updated to up-to-date versions for Python 2.7. This may eventually require to adapt custom Python scripts. Furthermore, procedures making use of Add-In operations may eventually lead to derivating results. **(11380)**

🔴 Spatial reference system transformations: There network is no longer offset from the correct position when changing the spatial reference system (SRS) to a SRS with a different geodetic datum without ToWGS parameters available. The internal changes also affect length calculations and intersections with buffers, whereby procedures using these methods or attributes may compute diverging results. **(12440)**

🔴 The menu entry Options has been renamed to User preferences and can be found in the Edit menu. The entry Network parameters has been renamed to Network settings. **(12294)**

Network comparisons:

🔴 Display percental deviations: Percental deviations with a value of 0 as denominator are considered as infinite valaues and are displayed with maximum bar width. In lists etc. they are represented as MIN or MAX. In cases were such values are used in further calculations, results may deviate from previous versions. **(9325)**

Other procedures, HBEFA:

⚠ The intersect operation (used interactively in 'Multi-edit' in 'Intersect'-procedure and in the calculation of cold emissions in HBEFA) now respects the projection defined for the network when evaluating buffers. This may lead to diverging results in both procedures. **(11246)**

Other procedures:

⚠ Division by 0 in 'Edit attribute': The procedure 'Edit attribute' used to return a 0 when executing a division by 0 in one of the terms, even if the target attribute supports empty values. The interactive operation and formula attributes correctly return empty values. The 'Edit attribute'-procedure now also returns an empty value (except if one of the other terms results in a non-empty value, of course) **(12053)**

⚠ Blocking back calculation: The formula for the calculation of the average waiting time has been changed. The average waiting time is the total waiting time divided by the effective capacity of the link. **(12128)**

PrT Assignment:

⚠ Assignment with ICA: The assignment method has been revised and improved. Thus, the results of the assignment change. **(10239)**

⚠ Cycle time optimization: Due to some internal changes, the results of signal time optimization may change in some specific cases (Signal controlers with only non-conflicting signal groups), if multiple equally good solutions exist. **(11791)**

⚠ ICA calculation: The attribute "ICA upstream adjustment" is now an attribute of the turn. Thus, the calculation results obtained change accordingly. **(12423)**

⚠ ICA, signalized: The factor f_bb (attribute of the leg) was replaced by an attributes for the definition of the local bus stopping rate. When reading data from earlier version the old factor will be converted into the new attribute. This may change ICA results, if the old factor was at the edges of the range of valid values. **(12336)**

⚠ ICA, signalized: The factor f_p (attribute of the leg) was replaced by attributes for the definition of the number of parking movements on the left and right side of the street. When reading data from earlier version the old factor will be converted into the new attributes. This may change ICA results, if the old factor was at the edges of the range of valid values. **(12337)**

PuT assignment:

⚠ The connection file now contains an identification-string. This avoids crashes when reading other binary files. **(12218)**

⚠ Headway-based assignment: Time profiles without service trips are ignored in the route search and choice if the automatic headway calculation is used. Thus, calculation results can change. **(11902)**

⚠ The timetable-based PuT assignment did not consider vehicle journey which start before the assignment time interval and end afer its end plus extension. Especially when using short assignment time intervals and extensions, this resulted in not all possible connections beeing found. This bug was fixed, which may lead to diverging assignment results. **(11738)**

PuT Line blocking:

⚠ Through some internal improvements, the results of line blocking and block check are allways consistent. Thes may lead to diverging results of the line blocking procedure. **(12277)**

⚠ Some minor errors in the assessment of waiting times occuring in rare scenarios have been fixed. These may lead to diverging results in some situations. **(11677)**

PuT Operating Indicators:

⚠ Calculation of vehicle costs: The vehicle costs for territories were calculated wrongly in some constellations:
- when the network contains a valid line blocking version, but a different vehicle combination was assigned to a vehicle journey section after the line blocking was calculated
The error was fixed, therefore the results for the "Territory all" change and are now consistent with the results for the line hierarchie. **(12078)**

⚠ In networks containing links of length 0, the procedure PuT Operating Indicators may have produced results were the sum of 'ServiceKM of lines' was different then the sum of 'ServiceKm of territory "TERRITORYALL"'. This was fixed, which may of course lead to diverging results of the procedure PuT operating indicators in these cases. **(12095)**

VISUM files:

- The names of the output files have been changed from log.txt into protocol.txt and message.txt into messages.txt. **(12315)**