VISUM 12.5 Release Notes

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12.52-15 [80931]	2013-07-29

⊕ New Features and Changes

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)**

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)**

✅ 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)**

COM Interface:

✅ 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)**

COM:

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

Data Model:

✅ 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)**

✅ 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 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)**

✅ 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)**

- ✓ 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)**

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)**

- ✓ 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)**

- ✓ 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)**

- ✓ 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)**

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)**

- ✓ 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:

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

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)**

- ✓ PuT flow bundle and survey data: PuT flow bundle no longer crashes, when there are implausible path legs of the type 'preceding'. **(12844)**

Graphics:

- ✓ 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)**

- ✓ 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)**

- ✓ 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)**

- ✓ 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)**

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)**

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)**

Lists:

- ✅ 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)**

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)**

- ✅ 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)**

Network comparisons:

- ✅ 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)**

Other procedures:

- ✅ 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:

- ✅ 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 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: 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)**

Subnetwork Generator:

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

- ✅ 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)**

- ✅ 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:

- ✅ 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:

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

- ✅ 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)**

- ✅ 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)**

⛔ Breaking Changes

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)**

12.52-14 [80245]   2013-06-27

✅ 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)**

- ✅ 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)**

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:

- ✅ Allocation of detector to lanes: Determining an allocation object of a detector to a lane based on its key did not work properly. This could lead to errors when trying to create or display a model transfer file. This error has been fixed. **(12549)**

- ✅ Lanes: The program no longer crashes when finding lanes based on their key, e.g. for the message window or the display of a model transfer file. **(12550)**

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:

- ✅ Aliases: The program no longer crashes when you open the dialog for managing aliases and there is an invalid alias, i.e. an alias without a target attribut, e.g. because the object defining the sub-attribute is missing. **(12582)**

- ✅ Network parameters: If the dialog 'Network parameters' was opened on another dialog page than 'Scale' and a setting was changed without opening the 'Scale' dialog, a projection you set previously could be lost. This error has been fixed. **(12557)**

- ✅ Parameter dialogs of the procedure 'Tour-based model - Combined trip distribution / mode choice': The program no longer crashes and there is no more undefined program behavior, when for a step of the procedure 'Tour-based model - Combined trip distribution / mode choice', you later add an additional demand layer as a reference object. **(12560)**

✅ 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)**

Foreign Formats:

✅ Reading shapefiles: Reading is no longer canceled, when the data records are very large (>10000 elements). **(12577)**

Graphical procedures:

✅ 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)**

✅ Flow bundle: If the only flow bundle condition is a destination (main) zone and the path is a walk link, the flow bundle is now treated correctly. **(12579)**

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)**

✅ 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 the legend: When you printed a network with the legend, the legend objects (text, polygons, background images) were not positioned correctly, if the option 'Scale absolute sizes in mm' was not selected. This error has been fixed. **(12551)**

Installation:

✅ University version, Python: The Python installation of the university version now works again under Windows 8. **(12439)**

Junction Editor:

✅ Allocation to main node: Now you can allocate a node to a main node in the Junction Editor or in the Create-Node dialog, even if the node has already been allocated to a main node. (The node is then no longer allocated to the previous main node). **(12535)**

✅ 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)**

Listings:

✅ Update: After you changed the number of columns in the Attribute selection dialog, the cell content was not updated, if the number of attributes remained the same. The cells still showed the old attribute values. This error has been fixed. **(12575)**

Network comparisons:

✅ Version comparison with adopted attributes: Version comparisons, where attributes were adopted from a comparison network, contained matrix-dependent zone attributes (e.g. orgin demand-DSeg, destination demand-DSeg, origin demand-flow bundle, destination demand-flow bundle) whose value was always 0. This error has been fixed. **(12529)**

Network Editor:

✅ 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)**

Procedure Sequence:

- Start procedure sequence via COM: If the procedure sequence has been started via COM (Visum.Procedures.Execute), the position of the arrow highlighting the current procedure is now updated after each procedure step. **(11675)**

PrT Assignment:

- Impedance settings in imperial units: In networks with imperial units, the coefficient for lengths in the impedance settings was converted the wrong way. This error has been fixed. **(12576)**
- 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 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)**

Timetable Editor:

- Hidden vehicle journey start and end times: The labeling of hidden vehicle journey start and end times was not displayed in the graphical timetable (in the view Vehicle journeys and Vehicle journey sections), if another attribute than the default one was used. This error has been fixed. **(12409)**
- 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:

- Update of network scaling factor: When you opened the Graphical timetable and in the Network graphic parameters, under 'Basis', changed the Text sizing factor, this change only became effective in the Graphical timetable after you clicked OK and quit the Graphic parameters dialog - not when you clicked the 'Preview' button. This error has been fixed. **(12191)**

VISUM Files:

- Read network file additively, coupling sections: If coupling sections only have one time profile item, you can now suppress messages by clicking 'OK for all' / 'No further messages'. **(12592)**
- Write version / RBC: In certain cases, networks containing RBC controllers could not be saved and Visum crashed. This error has been fixed. **(12559)**
- XML procedure parameters fle: When you save intervals for a distribution within the parameters of the procedure 'Estimate gravitation parameters (KALIBRI)', now 9 decimal places are output instead of 3. This way the shares are not rounded and can add up to 1 again. **(12590)**

Breaking Changes

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)**

12.52-13 [79640]   2013-06-07

New Features and Changes

Add-In:

➕ Import Transit Supply: Add-In 'Import Transit Supply' does now read line routes properly when succsessive elements have identical coordinates. **(12511)**

Add-Ins:

➕ Report PrT Assignment: Path for output file can now defined as relative path. This is significant in particular for use in scenario manager. **(11398)**

PrT Assignment:

➕ ICA, signalisiert: Benutzerdefinierte Nutzungsanteile von Fahrstreifen werden nun auch bei Fahrstreifengruppen berücksichtigt, die de-facto-Fahrstreifen enthalten. **(12450)**

✅ **Fixed Bugs**

Add-Ins:

✅ Add-In 'Import Transit Supply': If the initial data contained transport systems, whose code included lower-case letters, data import for the respective line routes failed. This error has been fixed. **(12480)**

Data Model:

✅ Indirect attributes: Aggregation function 'Number' now no longer shows a blank value, but a 0 for a 0 or 1 relation. **(12464)**

✅ Links in version comparison: In version comparisons, the value 0 was wrongly applied for attributes at blocked links in the cross-section mode. This error has been fixed. **(12442)**

Demand procedures:

✅ Linear combination of matrices and vectors: During parallel evaluation of linear combinations with formula matrices that refer to a matrix which also occurs in the linear combination, an error could occur in the matrix cache. This error has been fixed. **(12458)**

✅ Linear combination of matrices and vectors: In the procedure 'Linear combination of matrices and vectors' an error in the calculation of a passive relation led to cancelation of the procedure, although the option 'Only active OD pairs' was selected. This error has been fixed. **(12457)**

✅ Traffic distribution (4-step model), gravitation procedure: Calculation of a destination-bound gravitation model was unnecessarily slow and has been sped up significantly, particularly for larger models **(12523)**

Dialogs:

✅ Empty attribute selection in graphic parameters: When you used an attribute that does not exist in the network in the graphic parameters of a classification and then opened the dialog 'Edit graphic parameters', the first attribute of the network object was selected. Now the empty selection ("...") is kept again. **(12394)**

Filters:

✅ OD pair filters and TSys-based paths: The program no longer crashes when in a network assigned through TSys-based assignment, the OD pair filter with the option 'Filter network volumes' is activated. **(12486)**

Junction Editor:

✅ Has central island: In the Junction Editor, you can now show the attribute 'Has central island' to edit central islands. **(12501)**

Matrix Editor:

✅ Splitting extternal matrices: When you split an external matrix and no new origin/destinations were created, but the value of a 'zone' was distributed across other existing 'zones', the splitting was canceled with the error message "Splitting failed". The same error occurred in ScriptMuuli and in the separate MUULI application. This error has been fixed. **(12483)**

Miscellaneous:

✅ VISSIM Preview: When you called the VISSIM Previewer, a VISSIM window displayed the respective node correctly. However, if you then switched to another node, the preview function did no longer work; only in the title bar, the node number was updated. This error has been fixed. **(12469)**

Network Editor:

- ✅ Edit shape of line routes: If you had opened a list with line route or time profile elements, inserted a new line route and then canceled editing the shape, the program crashed. This error has been fixed. **(12493)**

- ✅ Full screen: If in the network there is only a single point-shaped object, then the 'Full screen' function works properly, i.e. the visible section covers a single object. **(11616)**

Other procedures:

- ✅ Emission calculation according to HBEFA: Calculation of cold start consumption for the pollutants Diesel (fuel consumption) and gas (fuel consumption) shows too high values. The total cold start consumption, however, is correct, as is the calculation of the warm emissions. **(12467)**

PrT Assignment:

- ✅ DUE procedure: Due to an error in the calculation rules, a much too high capacity was used for links with the option 'Fundamental diagram type: subcritical parabolic', so that in practice, use of the latter option or the 'subcritical linear' option did not produce any different results. This error has been fixed. **(12505)**

- ✅ ICA calculation after assignment: For node impedance calculation in the mode 'tCur update after assignment', both equilibrium and incremental assignment performed ICA updates before the assignment instead of only at the end. This error has been fixed. **(11406)**

- ✅ ICA calculation for two-way yield: Calculation of wait times for turns coming from shared lanes at nodes with a two-way yield was erroneous. This error was also found in the HCM published and has now been fixed (in VISUM). **(12536)**

PuT Assignment:

- ✅ Remainder matrix with TSys-based procedure: Remainder matrix was not calculated correctly during TSys-based assignment. This error has been fixed. **(12465)**

Schematic line diagram:

- ✅ Reaction to timetable changes: The schematic line diagram is drawn anew if the time of vehicle journeys or their allocation to service trip patterns is changed. **(12449)**

Subnetwork Generator:

- ✅ Geometries: The program could crash, if only parts of a node or main node and the geometry were written to the subnetwork. This error has been fixed. **(12477)**

⛔ **Breaking Changes**

Other procedures:

- ⛔ Emission calculation according to HBEFA: Calculation of cold start fuel consumption for the pollutants Diesel (fuel consumption) and gas (fuel consumption) shows too high values. The total cold start fuel consumption, however, is correct, as is the calculation of warm emissions. As a result of error correction, the calculation results for the cold start fuel supplement, for gas and diesel consumption, change. **(12467)**

PrT Assignment:

- ⛔ ICA calculation for two-way yield: Calculation of wait times for turns coming from shared lanes at nodes with a two-way yield was erroneous. This error was also found in the HCM published and has now been fixed (in VISUM). This changes results of ICA calculation on two-way yield nodes. **(12536)**

12.52-12 [78982]   2013-05-08

➕ **New Features and Changes**

Matrix Editor:

- ➕ Filters and dynamic aggregation: Analogous to the List view, the Matrix view now only shows OD pairs for aggregation that fulfill the filter condtions. Dynamically aggregated matrices are thus independent from the display modes Matrix / List in terms of data.
  Cells merely required to complete the matrix view are displayed empty. They cannot be edited and are excluded from arithmetic operations for selected data areas. **(11612)**

✅ **Fixed Bugs**

COM Interface, Lists:

- ✅ Moving link-based stop points: When in the COM interface or list, you moved a link-based stop point by changing its relative position, so that it was moved to the other half of the link, the reference node was not changed. As a result, the internal data model no longer worked properly and no further changes could be made. This error has been fixed. This problem did not occur when you used the 'Edit stop point' dialog or moved the stop point in the network. **(12385)**

COM Interface:

- ✅ IMatrixTable, SaveAsMatrix: When in the list view of the Matrix editor, you applied a filter to matrix data so that some rows were not shown and then selected "SaveAsMatrix", even so all rows were saved to the file. As there was not enough matrix data in the view, random values were written to the last rows. This error has been fixed. **(12367)**

Data Model:

- ✅ Edit Calender: The program no longer crashes when you change the calendar type (No calender, Weekly calendar, Annual calender), and there are either no aggregated or only aggregated analysis time intervals. **(12402)**

Dialogs:

- ✅ Column chart settings: When in the Graphic parameters dialog, you switched between the options 'One column per network object' and 'One column per analysis time interval', your attribute selection was deleted. This error has been fixed. **(11679)**

Foreign Formats:

- ✅ OSM import: The import process now works independently of the operating system language used (in particular with operating system language Turkish). **(12410)**

Listings:

- ✅ Fonts: The fonts set under "Lists: Set print page" are now used for printing. **(11154)**

Main Window:

- ✅ Reset window configuration: The 'Reset toolbars' and 'Reset window configuration' buttons under Options have now been organized under one button. **(12032)**

Network editor:

- ✅ Reading survey data: The messages generated when you read survey data were shortened. In particular, the full path and file name are no longer output with each message. **(12233)**

- ✅ Edit shape of line route: When you edited the shape of a line route so that it ended at a node, then clicked 'Cancel' in response to a forbidden state message, no line route items were created. If you then saved this state to a version file, it could no longer be read. This error has been fixed. **(12416)**

- ✅ Network window during digitizing process: When you started digitization (line route, system route, PrT path or link sequence from shortest path search), the Network window was not moved to the foreground, unless you started the process from the Network window. This error has been fixed **(11386)**

Passenger Surveys:

- ✅ Plausibilization: The program no longer crashes during plausibilization of survey data when no FromStop or ToStop are specified for a path leg. **(12428)**

PrT Assignment:

- ✅ ICA, signalized, HCM 2000: The loss time for lanes was not calculated correctly when the 'Start-up Lost Time' was unequal to 2.0. This error has been fixed. This produces minor changes in the calculation according to HCM 2000. **(12431)**

PuT Assignment:

- ✅ Connection file and MPA: The program no longer crashes when performing time-table based assignment with a percentage share of connectors (MPA) and the paths are read in from a connector file. **(12420)**

- ✅ Program crashes after executing command: When during PuT assignment, the list "PuT path legs" was open and a path had been selected, Visum crashed after performing the calculation. This error has been fixed. **(12355)**

- TSys-based assginment: For zones without origin traffic, part of the destination traffic was omitted, i.e. was not assigned. This error has been fixed. **(12392)**

PuT Operating Indicators:

- Territory-related indicators: Indicators referring to territories (obtained from procedures 'PuT operating indicators or 'Territory indicators') are now discarded when a territory is assigned another surface by changing its surface ID attribute. **(11529)**

Scenario Management:

- Scenarios not calculated: In some cases, it could occur that a scenario to be calculated by a computation Visum was not calculated. To solve this problem, reset the scenario to "to be calculated". **(12435)**

Signal Time-Space Diagram:

- Signal offset: You can now press OK to confirm a signal offset entry. **(11202)**

VISUM Files:

- Even with Office 2010 installed on a 64-bit Windows version, you can read older Access database files (<= Access 2003). This is also true for the HBEFA data package, which is still provided in an older database format. **(12451)**

12.52-11 [78466]   2013-04-19

⊕ New Features and Changes

PrT Assignment:

- ⊕ ICA calculation: The signal group attribute "ICA start-up loss time" is accounted for in ICA calculation as per HCM 2010. **(12300)**

PuT Assignment:

- ⊕ Warnings about time series without demand data: The warnings about time series without demand data were improved. **(12377)**

✓ Fixed Bugs

Add-Ins:

- Import Google Transit Feed: Documentation of the add-in 'Import Google Transit Feed' has been improved. **(12370)**

- Import Transit Supply: Errors no longer occur in the 'Import Transit Supply' add-in if a stop point has already been geocoded in the target network. **(12376)**

- Nested Demand Model GAP Calculation:
  The GAP for incremental Nested Demand Models was computed incorectly, which could even result in negative GAP values. The error was fixed and the GAP should now be computed according to WebTAG 3.10.4 **(12399)**

COM Interface:

- Screenshot: The Screenshot method did not work when called within the context of procedure execution ('run script' procedure). This error has been fixed. **(12338)**

- SetMultipleAttributes: The program no longer crashes when the method SetMultipleAttributes is called and the parameter AttrIDs (VARIANT type) is not precisely of the type Array[BSTR]. **(12375)**

Dialogs:

- Value range verification in tables: If during verfication of the value range in tables, data is found that vioates the value range, now a clearer message is displayed. **(12302)**

Foreign formats:

- OpenStreetMap import: When you import OpenStreetMap data, the link length is now set correctly, i.e. according to the polygon length. Previously, it was set according to the direct distance between link 'from node' and 'to node'. **(12321)**

- OpenStreetMap: When importing OpenStreetMap data, you can now also use link type '0' as default link type for non-allocated links. To do so, in the import configuration file *.cfg, in the '[LinkTypeRules]' section, set the value 'DefaultType' accordingly. **(12024)**

Listings:

- Total row for logical value: When you wanted to show the total of an indirect boolean attribute and the extended entry options were enabled, a check box was displayed instead of the total. This error has been fixed. **(9775)**

- Updating PuT path lists: If in PuT path lists, you selected 'Flow bundle routes' while an OD pair filter was enabled (but without the 'Filter network volumes' option) and you then changed the filter condition', so that the number of paths displayed changed, the list content was updated, but the number of rows displayed was not. So it occurred that some paths were not or only partly shown, while others were displayed mutiple times. This error has been fixed. **(11676)**

Main Window:

- Matrix tree: When procedures are carried out, the Matrix tree no longer collapses but remains unchanged. **(10881)**

Network Editor:

- Replacing vehicle combinations at vehicle journey sections: The program no longer crashes when you use the special multi-edit function 'Replace vehicle combinations' to replace a vehicle combination by several vehicles in a network with PuT assignment results and the following conditions apply: the vehicle journey sections have to be duplicated, the assignment results are thus dismissed, and the corresponding query is answered with 'No'. **(12372)**

- Splitting PrT paths and links: When you split a link, only one of the PrT paths running above it was changed accordingly. All other PrT paths were deleted. Now all PrT paths are kept. **(12374)**

PrT Assignment:

- ICA calculation for RBC controllers: When you previously calculated the level of service for RBC controllers according to ICA, the difference between lead and lag phases with left turns was not considered. This error has been fixed. **(12364)**

PuT Assignment:

- Warning about time series without demand data: When zone connector shares were used for a PuT assignment (MPA), incorrect warnings were output about zone OD pairs without demand data in the time series. This error has been fixed. **(12371)**

Timetable Editor:

- Undo create stop point: The program no longer crashes when you create a stop point, add it as a stop to a line route, then open the Timetable editor, undo creating the stop point in the Network editor, and then make another change to the network. **(12400)**

VISUM Files:

- Generating model transfer files: If an opened Matrix editor was saved in a version file to be compared, the program crashed when trying to generate model transfer files. This error has been fixed. **(12351)**

Breaking Changes

PrT Assignment:

- ICA calculation for RBC controllers: When you previously calculated the level of service for RBC controllers according to ICA, the difference between lead and lag phases with left turns was not considered. This error has been fixed. This leads to different results of ICA calculation and assginment with ICA. **(12364)**

- ICA calculation: The signal group attribute "ICA start-up loss time" is accounted for in ICA calculation as per HCM 2010. Thus, the calculation results obtained change accordingly. **(12300)**

12.52-10 [78072]   2013-03-23

New Features and Changes

Add-Ins:

⊕ PrT Reporting: The add-in for PrT reporting was adapted to not be carried out as a second procedure, as this is no longer possible. If there are several PrT assignment procedures for different demand segments, in the report, a separate page is created per procedure. **(12084)**

COM:

⊕ IMatrix.Save: The method IMatrix.Save(BSTR FileName, VARIANT Format) now also accepts VARIANT BYREF. **(12357)**

⊕ IVisum, Embedded: The IVisum interface now provides a new property called "Embedded. It shows whether or not Visum was started via the COM interface. In addition, messages are now dealt with differently: Visum started via the COM interface used to suppress all blocking messages (notes, warnings, errors, requests, etc.). Now these messages are only suppressed when related to an action started via the COM interface. During interactive use of Visum started via COM, messages are now displayed on the interface. **(12296)**

⊘ Fixed Bugs

Add-Ins:

⊘ Cube importer: During cube import, comment lines in line route files are skipped and no longer cause the import process to fail. **(12273)**

COM:

⊘ IVisum.Graphic.Autozoom(): IVisum.Graphic.Autozoom() führte bei Strecken-Haltepunkten zum Absturz. **(12359)**

Data model:

⊘ Surfaces from files: When harmonizing surfaces that were imported (shapefile, network file), it occurred that faulty data was generated. Closed surfaces were incorrectly converted into open polygons. This error has been fixed. **(12354)**

⊘ Link -> Line routes relation: Analysis of the links to line routes relation was sped up. **(12304)**

⊘ MIN and MAX values in integer attributes: The MIN and MAX values of integer attributes were not treated correctly. This led to error messages, particularly during subnetwork intersection, if an integer attribute contained MIN or MAX values or they were entered in a list. This error has been fixed. **(12240)**

⊘ Production and attraction rates: Program no longer crashes when writing demand files, generating a subnetwork and adopting a demand model, or during version comparison when the productions, attractions or home trips are set to default values for all demand strata and zones. **(12350)**

⊘ Signal coordination groups: When a non-empty signal coordination group was deleted, it could happen that Visum crashed or non-saved version files could not be opened again. This error has been fixed. **(12323)**

Dialogs:

⊘ ANM export: When you saved export parameters ("Save") the file names were not adopted if entered manually instead of using the "Browse" command. Now file names are also adopted when entered manually. **(12248)**

⊘ Changing the font size: Dialogs whose size cannot be changed are now displayed correctly, even if you change the font size in Windows under Display options. **(12316)**

⊘ Demand data: When you change the name of a time series in the "Standard time series" dialog, entries in the "Standard time series" column, in the "Demand time series" dialog, are now immediately updated accordingly. When you change a time series code in the "Demand time series" dialog, the entries in the "Demand time series" column, in the "Demand segments" dialog, are now immediately updated accordingly. **(11776)**

⊘ Edit fleet compositions: The program no longer crashes when you paste data from the clipboard into HBEFA fleet composition shares, in the 'Management of weight proportions of fleet compositions' dialog. **(12266)**

⊘ Graphic parameters dialog for link bars: The 'Use fill classification' option, available in the Bars table, only applies to standard and difference bars, however, not to line and path bars. This is why the line bars and path bar rows are grayed out. You can select a classfication (except for by network objects) for line and path bars in the Links - Bars dialog. **(12297)**

✅ Graphic parameters: The program no longer crashes when you change a value in the Link->Bars->Display page (for example LabelThreshold) and leave the page with selection of another tree item (without pressing the enter key before). **(12288)**

✅ Time series: For a time series you can now enter 0h as start time. You can also close the dialog after correcting interval values because the start time lay after the end time. **(11777)**

Foreign formats:

✅ OSM: During OSM import the Turkish characters u'■';, u'■';, u'■';, u'■';, u'■';, u'■'; are no longer converted into G, g, i, I, s, S. **(12217)**

Graphical Procedures:

✅ Transport system-based PuT shortest path search: Transport system-based PuT shortest path search now responds to network changes, i.e. your search is repeated with the same parameters as soon as the network is changed. **(12247)**

Hauptfenster:

✅ Shortcut keys: Shortcut keys now also work, if the focus is not on a view (Network editor, list, etc.) or a tool window. When you switch from another application to Visum, using the shortcut keys Alt + Tab, the focus is on the window it was last on. **(12325)**

Junction Editor:

✅ RBC controllers, signal programs: "Signal program" list: the RBC controller pages "Geometry->Signal groups" and "Signal times" now show all data again. Previously, only currently active patterns were displayed. **(12303)**

Main window:

✅ Time interval: If in the Network view, attributes are set with subattribute CurInt, e.g. VolumeCurInt as a link bar, the display is now updated correctly if you select a different time interval in the Time interval list. (The Forward and Backward buttons have been working fine.) **(12312)**

✅ Moving windows: As soon as you moved a window outside the main window, the mouse pointer would not follow and you had to click the window again to move it to the position of your choice. This error has been fixed. **(11589)**

Miscellaneous:

✅ Internationalized error messages: Internationalization was added for several messages, specifically regarding the Matrix editor, matrix histogram, line routes, and PrT paths. **(12311)**

✅ Warning background files not found: When you opened a version file whose background was not found, the option 'Do not show further warnings' in the warning message did not work. This error has been fixed. **(12181)**

Network comparisons:

✅ Version comparison with loaded network: During version comparison with a loaded network in the background, comparison function data was not evaluated correctly if the referenced attribute contained subattributes. This error has been fixed. **(12317)**

Network Editor:

✅ Detectors and autozoom: With the list setting 'Mark with autozoom', the network section is now adapted accordingly when a detector is allocated to a node or main node. **(12113)**

✅ Split link: Visum no longer crashes when a link is split via which a PrT path (element of a path set) runs. **(12310)**

✅ Split link: When a link split was undone, the adjustments made to turns and main turns were not undone properly. This error has been fixed. **(12314)**

Other procedures:

✅ Calculate service trip patterns: The program no longer crashes when 4 or more service trip patterns displaced to each other, with the same service frequency, coincide. Example: departures at minutes: 00, 01, 02 and 03, every 10 minutes. **(12343)**

PrT Assignment:

- ✓ Assignment with ICA and LUCE: If during an assignment with ICA, LUCE was chosen as a subordinate assignment procedure, the computation process was not canceled when the convergence criterion was fulfilled, but subsequent iterations were carried out up until the maximum threshold value was reached. This error has been fixed. **(11335)**

- ✓ Skim v0: Errors occurred when trying to calculate skim v0 (speed in uncongested network) if skim t0 was not calculated at the same time (journey time in uncongested network). This error has been fixed. **(12287)**

- ✓ Storage consumption: Several procedures based on PrT paths (Calculate skim matrix, Calculate flow bundle) now require less storage space. This is particularly noticeable when you use multiple processor kernels and MPA. **(12306)**

PuT Assignment:

- ✓ Line route item volumes: The calculation of volumes at line route items per time interval was corrected. To divide a line route item into time intervals, the program had mistakenly used the departure time of its previous line route item. Now the departure time of the respective item itself is used. **(12295)**

- ✓ Perceived journey time: After capacity-restricted assignment, the perceived journey time was not saved to the paths, even if the corresponding check box was selected. **(12346)**

PuT operating indicators:

- ✓ Revenue calculation with missing paths: To calculate the revenue at a line hierarchy per territory, you have to save paths as routes or connections during the assignment process. If you did not save the paths, the calculation status for line hierarchy and territory (base) still used to be set to calculated. As a consequence, cost coverage was also considered calculated. This error has been fixed. **(12327)**

Subnetwork Generator:

- ✓ Store demand model: The program no longer crashes when you generate a subnetwork, using the option 'Store demand model with subnetwork', the demand model is EVA or VISEM, and default mobility rates are set for all demand strata and person groups. **(12292)**

Timetable Editor:

- ✓ 'Create vehicle journey(s)' window: The 'User-defined attributes' tab now shows also the names of the attributes in the list. **(9767)**

VISUM Files:

- ✓ Zone attribute files: Reading of zone attribute files was sped up. **(12358)**

12.52-09 [77514]   2013-03-11

✓ **Fixed Bugs**

Data Model:

- ✓ Detectors on lanes: In some cases detectors assigned to lanes were not read in with the version file. This error has been fixed. The detectors are now positioned correctly on the lanes. **(12212)**

- ✓ Formula matrices and OD pair filters: Formula matrices whose formula 'applied to active OD pairs only' did not update their sum totals (row total, colum total, sum total) when OD pair filters for zones or main zones were set or restored. This error has been fixed. **(12176)**

Dialogs:

- ✓ Network parameters, separators: Certain special characters are no longer permitted as separators. When they were used, the program could no longer read network and attribute files, or generate a subnetwork. These special characters are the semi-colon and the dollar sign. **(12058)**

- ✓ Program status: In some cases, when the dialog "Program status" was opened or closed, the program crashed. This error has been fixed. **(12244)**

Graphics:

- ✓ Reading GPar files: When Visum 9.5 GPar files are read that contain POI category parameters that do not exist in the current network, the program no longer crashes. **(12242)**

Matrix Editor:

- ✓ Formula matrices, histograms: Matrix histograms based on formula matrices are now automatically updated when data in the respective formula matrices are changed. **(11117)**

Micellaneous:

- ✓ Program start failed: When Visum was started, it could end up in an infinite loop if the process hierarchy contained cyclic references. This probelm particularly occurred when software components were developed that accesssed Visum via COM and these components were started from a debugger. **(12269)**

Network Editor:

- ✓ Shortest path search, deleting connectors: When a PuT TSys shortest path search is performed for an area between zones and a connector that is part of the shortest path is deleted, the program now no longer crashes. **(12219)**

Procedure Sequence:

- ✓ Add-In parameter dialogs: The number of the procedure is now passed on to the Add-In when opening an Add-In parameter dialog. You can thus display a preview of the Reporting-Add-In again. **(12179)**

PuT Assignment:

- ✓ Special walk times for headway-based assignment: If there were special transfer walk times for individual time profile pairs or transport systems, but not for other pairs at the same stop area pair, erroneous transfer times and paths with excessive journey times could occur. This error has been fixed. **(12251)**

Scenario Management:

- ✓ Detectors: Allocations of detectors to SCs were lost when reading .tra files or additively reading .net files, if the read file contained detectors. This also affected the scenario management, because the data of the scenenarios were not restored correctly. This error has been fixed. **(12286)**

VISUM Files:

- ✓ Matrix editor for external matrix: You could not open version files and restore opened views, if one of the views was a matrix editor for an external matrix and could not be found under the specified path. This error has been fixed. **(12222)**

- ✓ Reading version files: Version files could no longer be opened after they had been saved with the matrix editor opened. This error has been fixed. **(12267)**

⚠ Breaking Changes

PuT Assignment:

- ⚠ Special walk times for headway-based assignment: If there were special transfer walk times for individual time profile pairs or transport systems, but not for other pairs at the same stop area pair, erroneous transfer times and paths with excessive journey times could occur. This error has been fixed. The respective assignment results are changed due to the bug fix. **(12251)**

12.52-08 [77264]   2013-02-28

⊕ New Features and Changes

Add-Ins:

- ⊕ Import Transit Supply: The new add-in 'Import Transit Supply' allows for the import of PuT data from another version file into the currently loaded network. Key is that the import is not based on any known IDs, but solely on geographic information. Stop points are placed at the most plausible locations, so that excellent matching of the line routes is achieved.
  In a typical application the "other" network contains timetable data with a rudimentary network that often just consists of stop point locations (as e.g. created through HAFAS import), whereas the loaded network is a PrT network and bus and tram transit lines are to be routed correctly into this network. **(11008)**

COM:

- ⊕ IMessage: Message object (IMessage) has two new, only readable properties:
Source ([out, retval] MessageSource * messageSource) provides the message source as Enum of the following types 'COM_Exception' and 'Other'.
Priority ([out, retval] MessagePriority *priority) provides the message priority. **(12126)**

Data Model:

- ⊕ Lengths: For attributes of the type 'Length', you can now also specify the length in the units [cm], [mm], and [in]. **(12201)**

- ⊕ Vistro base volume input: The "Vistro base volume input" attribute is now available for turns. It allows users to enter volume data that can be used in Vistro after import of a Visum file. **(12227)**

✅ Fixed Bugs

Add-Ins:

- ✅ Calculate Matrix: The result matrix no longer contains invalid data. This occurred when executing the add-in in the procedure sequence after switching from View mode to Edit mode in the Parameters dialog. **(12168)**

- ✅ Import Google Transit Feed: During the import of Google Transit Feed data, duplicates of time profiles are now disabled. **(11945)**

- ✅ Opening the Parameters dialog: When opening the Parameters dialog of any add-in, an error message ('AddTypeLib failed') was displayed, if the user had no write rights for the Python folder. This error message, however, was needless. It is not required in this context and has now been disabled. **(11947)**

ANM:

- ✅ Import: Now detectors positioned at exit lanes are also imported. **(12210)**

- ✅ Number of lanes: Using ANM export, you can now export more than 9 lanes. **(12202)**

COM Interface:

- ✅ Adding filter conditions (AddCondition): Wenn adding a filter condition (AddCondition) to an attribute of the type Enum, the value of the Enum can now be specified either in numerical form or by the identifier, as long as this is supported by the client language. A string that contains the numerical value however is not permitted. If the value is specified in an invalid form, a specific error message is issued and the filter condition is not set. Furthermore obsolete attribute names will be converted into new ones, if possible. This may change the filter result. **(11143)**

- ✅ Flow bundle calculation: When a flow bundle was calculated for several demand segments and, for one of them, there was no assignment result, the calculation was canceled and an error message displayed. The calculation procedure has been adapted, so that an error message is only shown if there are no appropriate assignment results for any of the demand segments. **(12193)**

- ✅ Print: It is now possible again to execute the Plot() method several times in a row. This had previously failed from the second time the method was called. Then an error message ("PostScript Error OFFENDING COMMAND: GpPBeg1") was displayed. **(10659)**

Data Model:

- ✅ After inserting or deleting fare zones or changing the allocation of stops to fare zones, the stop-fare zone allocations displayed were not updated. This error has been fixed. **(12110)**

- ✅ Delete detectors / nodes: When nodes were deleted it could happen that defect detectors still remained in the network. This led to problems, e.g. when trying to save the network. This error has been fixed. **(12158)**

- ✅ Delete main nodes: The process of deleting main nodes that contain numerous nodes has been speeded up. **(12164)**

- ✅ Detectors on nodes / main nodes: When a detector is assigned to a node or main node, the geometry of the node or main node now is set to non-default. **(12211)**

Dialogs:

- ✅ Color selection: In the Color selection dialog, entering a value for an RGB component could also change the value of the other two components. This error has been fixed. **(12140)**

- ✅ Graphic parameters: When you selected "Redefine all classes" in the dialog Graphics -> Edit graphic parameters -> Zones -> Display, Visum could crash if there were a lot of classes. This error has been fixed. **(12154)**

- ✓ Options for editing the shape of line routes: The default value for parameter 'Lengthen vehicle journeys automatically' was not adopted from the options into the dialog. This error has been fixed. **(12184)**

Foreign Formats:
- ✓ OpenStreetMap import: The course of link polygons is now adopted from OpenStreetMap data more accurately. **(12180)**
- ✓ OSM import: The import process now works independently of the operating system language used (in particular with operating system language Turkish). **(12170)**
- ✓ railML import: When a calendar filter was used for data import, train objects with several trainPartSequences were not imported, if the first one contained a trainPart that did not run on any of the valid calender days (even if the following trainParts did). In this case, no error message was output for the journey rejected. Now such train objects are imported and their route course is reduced to the share valid within the filtered time period. **(12152)**

Graphical procedures:
- ✓ Brackets in Flow bundle dialog: Brackets entered in the Flow bundle dialog were not adopted into the data model, i.e. the flow bundle was always depicted as if there were no brackets. This error has been fixed. **(12229)**
- ✓ PuT flow bundle: When a PuT flow bundle included the term 'Active lines' and the filter and/or the selection were changed after flow bundle calculation, Visum noticed this change and offered to update the flow bundle data, but then the number of new active lines was not updated correctly. This error has been fixed. **(12185)**

Graphics:
- ✓ Column diagrams in the legend: When the scaling of column charts was displayed in the legend, a wrong average value was shown. This error has been fixed. **(12139)**
- ✓ Internet maps: Program no longer crashes when you try to access Internet maps and the server contacted sends a response of less than 4 and greater than 0 bytes. **(12155)**
- ✓ Internet maps: Sometimes internet maps called were wrongly deteled from the hard drive.This error has been fixed. **(12203)**

Listings:
- ✓ Calculate analysis rows: In lists the analysis rows and aggregation classes have been calculated too often, especially when graphic parameters were changed. Now unnecessary reporting is suppressed, as long as the Graphics parameter dialog is open. **(11927)**
- ✓ POI list: When a POI category was created or deleted while the POI list was open, the drop-down list of categories was not refreshed. If you then selected a category that had already been deleted, Visum crashed. This error has been fixed. **(12124)**

Main Window:
- ✓ Window configuration for old version files: If version files older than Visum version 11.0 are opened (these do not contain any window configuration data), their window configuration is now reset, i.e. the focus is on the open Network editor and its menu items are enabled. To keep the current session's window configuration, select the option 'Use version file settings, otherwise keep' or 'Keep always'. **(12134)**
- ✓ Writing version files without the user interface: When Visum is run without its user interface, but with the 'UI' add-on (e.g. as a service, although this use case is not supported), the program no longer crashes when writing version files. **(12205)**

Miscellaneous:
- ✓ Messages displayed while reading version: Messages about external matrices not found could still be displayed, although the option "No further messages during 'Read version'" had been selected. This error has been fixed. **(12014)**

Network comparisons:
- ✓ Version comparison with loaded network: If a version comparison, with a network loaded in the background, is copied to user-defined attributes, users can define a layout file for this purpose. This layout file, however, was always empty. This error has been fixed. **(12197)**

Network Editor:

- ✅ Allocate nodes to main nodes: Allocating nodes to main nodes could cause problems, if PrT paths that belonged to a set of paths led via one of the nodes. In some cases, PrT paths were rejected without a warning message being issued or inconsistent paths were created. This error has been fixed. **(12187)**

- ✅ Editing the course of PrT paths: The program no longer crashes in certain cases when several PrT paths are edited simultaneously. **(12145)**

- ✅ Graphical procedures: Visum no longer crashes when you open a graphical procedure dialog (desire lines, isochrones, shortest path search), click in the Network editor window and then press F5. **(12082)**

- ✅ Mark link: Visum went into an infinite loop when a link with invalid orientation was marked. This error has been fixed. **(12121)**

- ✅ PrT paths and main nodes: When a PrT path was edited in a network with main nodes and, within the main node, touched other cordon nodes than the ones at which the node was entered or exited, Visum did not accept the path. This error has been fixed. **(12188)**

PrT Assignment:

- ✅ ICA calculation for roundabouts according to HCM: In the ICA calculation for roundabouts the bypass volume was not subtracted when calculating wait times and congestion length. This error has been fixed. **(12150)**

- ✅ ICA, signalized, fully actuated: The minimum green time was not taken into account when calculating the duration of stages of fully actuated RBC controls. This error has been fixed. **(12159)**

- ✅ ICA, signalized, HCM 2010, RBC, semi- or fully actuated: Visum could crash during ICA calculation if there was a phase without a lane. This error has been fixed. **(12151)**

- ✅ Node impedance calculation with ICA according: Level Of Service (LOS) for legs of major flow is no longer listed in ICA report, as it cannot be calculated according to HCM. The same applies for the LOS at nodes. **(12183)**

PuT assignment:

- ✅ Skims for PuT Aux: Program no longer crashes, if the calculation of skims for PuT Aux transport systems is set for a network, these transport systems are then deleted and a subsequent skim calculation is performed. **(12198)**

Signal time-space diagram:

- ✅ Adopting network changes: Changes to the network, e.g. to node atrributes, were not consistently adopted in the signal time-space diagram. This error has been fixed. **(11201)**

- ✅ Display entire network: The 'Display entire network' functionality in the signal time-space diagram has been improved. Furthermore, a display of the entire network can also be achieved by repeatedly using the 'Zoom out' functionality. **(11200)**

Subnetwork Generator:

- ✅ Toll systems: If all links belonging to a specific toll system were disabled, export of the subnetwork failed. This error has been fixed. **(12153)**

Timetable Editor:

- ✅ 'Undo' after creating a vehicle journey: Visum no longer crashes when deleting a vehicle journey with 'undo' which is marked in the tabular timetable and was inserted beforehand. **(12040)**

- ✅ Duplicate vehicle journey: Duplicating a vehicle journey failed if it was not coupled, i.e. no copy was created. This error has been fixed. **(12189)**

VISUM Files:

- ✅ Attributes including sub-attributes: When text files (network, attribute, model transfer, demand files) are now read in, attribute values containing too many sub-attributes are not read in. Previously, when time-varying attributes were used, values with a sub-attribute could overwrite those without a sub-attribute, i.e. the 'main attribute value' was overwritten. **(12190)**

- ✅ Demand file with formula matrices: Demand files with a formula matrix, whose definition contains a reference to another matrix listed further below in the file, could not be read in. This error has been fixed. **(11156)**

- ✅ Line import via network file: When reading line data with option "Permit link or create link of type", newly created links did not have correct orientations. The orientations of the newly created links are now recalculated at the end nodes. **(12122)**

- ✓ Statistics during additive network reading: When you closed the "Statistics of modifications" (created optionally during additive network reading,) the dialog asking you whether the statistics shall be saved as model transfer file was no longer displayed.This error has been fixed. **(12208)**

⚠ Breaking Changes

COM:

- ⚠ IMessage: Message object (IMessage) has two new, only readable properties:
  Source ([out, retval] MessageSource * messageSource) provides the message source as Enum of the possible types 'COM_Exception' and 'Other'.
  Priority ([out, retval] MessagePriority *priority) provides the message priority.
  Through this change the COM interface itself is extended. The extension is downwards compatible, i.e. all existing scripts will continue to run. **(12126)**

PrT Assignment:

- ⚠ ICA calculation for roundabouts according to HCM: In ICA calculation according to HCM, the bypass volume was not subtracted when calculating wait times and congestion length.This leads to different results for an assignment with ICA if there are roundabouts with bypass volumes on shared lanes that are calculated with the HCM method. **(12150)**

- ⚠ ICA, signalized, fully actuated: The minimum green time was not taken into account when calculating the duration of stages of fully actuated RBC controls. This error has been fixed. **(12159)**

12.52-07 [76545] 2013-01-30

✓ Fixed Bugs

Add-Ins:

- ✓ Add-In POI -> FareZone: Characters in the names of the used POIs which are not included in the character set ISO-8859-15 are now replaced by blanks; thus, the network can be saved to file. In previous versions, running this Add-In returned an error message in this case. **(12091)**

- ✓ FareZone -> POI: Now, a stop can be allocated to several fare zones. **(12119)**

- ✓ With any screen resolution, the buttons 'OK' and 'Cancel' are now visible. **(12089)**

COM Interface:

- ✓ Map Matching: The program will no longer crash during Map Matching by means of the incremental algorithm in certain cases, if Map Matching was not successful. **(12115)**

Data Model:

- ✓ Editing GIS categories: GIS categoriescan be edited again, in lists, for example, or in the Quick view window. **(11950)**

Demand Procedures:

- ✓ Modal Split (Standardized assessment): By mistake, the B2 method used to regard the 'PrT With Scenario' matrix for calculations instead of the 'PrT Without Scenario' matrix. This bug was fixed. **(9902)**

Dialogs:

- ✓ User-defined attributes: In the 'Edit' dialogs of the various network object types, the UDAs are visible again and can be edited. **(12118)**

Filters:

- ✓ Complement in filter conditions with relation: When generating a complement in a filter condition that uses a 1:n relation, so far this complement only applies to the condition at each single object of the relation but not the entire condition, as the dialog suggests. For a correct generation of a complement however, the set operation must be taken into account. (The complement of 'All x = A' is 'There is an x != A', and not 'All x != A'). This has been changed in just that way.
  The generation of complements on the highest level, thus for the entire filter, remains unchanged. **(12042)**

Graphical Procedures:

- ✅ Shortest path search PuT and PuT-TSys: If no path can be found, the shortest path search PuT as well as the shortest path search PuT-TSys will return a message. This is also the case if another search is started due to changes to the network. **(12087)**

Graphics:
- ✅ Catchment areas of stops in the legend: In the legend, stop catchment areas were not drawn if these were classified and the 'Draw' option was unchecked in the unclassified graphics parameters. This bug was fixed. **(12077)**
- ✅ Layer 'Draw' in case of missing image reference in legend: If the layer 'POI lines' and the legend are activated and an image with a missing image reference is set in the footer of the legend, on some operating systems Visum used to stop drawing after drawing the layer 'POI lines'. This error has been fixed. **(12088)**
- ✅ Personal Geodatabase ESRI 10.1: A qualified error message will be returned when trying to connect to ESRI 10.1. Previously, only versions up to 10.0 used to be supported. **(12125)**

Listings:
- ✅ Points of Interest: Switching to 'All' in a list read from the version file will no longer discard the current column widths. **(12104)**

Network Editor:
- ✅ Connecting line routes: If line routes were connected in such a way that the two original line routes were merged, an incorrect 'Vehicle journeys are deleted' message used to appear, though no vehicle journey was deleted. The misleading message will no longer be returned. **(12083)**

Other Procedures:
- ✅ Calculate service trip patterns: The calculation of service trip patterns no longer leads to a crash under specific circumstances. **(12138)**
- ✅ ScriptMuuli: Now, ScriptMuuli again uses the option settings set in the registry. **(12109)**

Procedure Sequence:
- ✅ Crash due to 'Create group': In certain situations (when closing the 'General procedure parameters' dialog, for example) the program sometimes crashed while the procedure sequence view was being open. This was only the case with a group in the listed procedure sequence. **(11995)**
- ✅ Loading a parameter file: Repeated opening of a parameter file sometimes caused a program crash. This bug was fixed. **(12002)**

PrT Assignment:
- ✅ ICA calculation according to HCM 2010: With the lanes L+LTR, or L+LR accordingly, the lane group of the exclusive left turning lane was not loaded. This bug was fixed. **(12116)**

PuT Assignment:
- ✅ Connection import:The import will no longer crash if files are to be read in which do not meet the connction data file format correctly. For instance this is the case, if only one of the files generated additionally during the connection export ('connections_1.con', 'connection_2.con' etc.) is to be read, due to the missing header information in these files.
  Furthermore the program will no longer crash if a series of those automatically generated files is incomplete, i.e. if some of the files are not available. **(12123)**
- ✅ Skim matrix calculation with PuT-Aux: The skim matrix calculation returned incorrect values for paths containing several consecutive path legs using a PuT-Aux transport system. The error has been fixed. **(12106)**
- ✅ Validation of time series: Prior to the actual procedure, the timetable-based assignment now checks matrix time series for OD pairs without demand. In this way, a possible crash due to the usual check while the computation procedure is running can be avoided. **(11937)**

PuT Operating Indicators:
- ✅ Block indicators: If all vehicle journeys of a block had a lengths 0 or a duration 0, so far an undefined value used to be assigned when assigning vehicles (proportional in length or time) to operators, lines etc. This error has been corrected by considering the proportional value as 0 in this case. This concerns the indicators number of vehicles (length proportional), number of vehicles (time proportional), and vehicle costs. **(12073)**

- ✅ Link costs of links with length = 0: In previous versions, the link cost calculation sometimes returned undefined results if the network included links with length = 0. This bug was fixed. **(12102)**

VISUM Files:

- ✅ Basic PrT volume: Also XML parameter files can now handle negative factors as basic volume multipliers. **(11979)**

- ✅ Formula attributes: Formula attributes with reference to attributes with sub-attributes of the Enum type ("Weight" for connectors, for example), were not handled correctly when writing or reading network files. Accordingly, their definitions could not be taken over correctly. This bug was fixed. **(12108)**

- ✅ Localization of model transfer files: In model transfer files, subattributes were translated into all languages. Model transfer files could thus not be read because Visum only understands the translations of certain languages. This error has been fixed. **(12107)**

- ✅ Program crash when reading a version from file: Reading a version from file with a path (folder and file name) consisting of more than 255 characters used to cause a program crash. In this case, the current path which might have been modified in the file system was not cruxial, but the original path used in Visum for saving this version to file. This bug was fixed. **(12103)**

⚠ Breaking Changes

Filters:

- ⛔ Complement in filter conditions with relation: When generating a complement in a filter condition that uses a 1:n relation, so far this complement only applies to the condition at each single object of the relation but not the entire condition, as the dialog suggests. For a correct generation of a complement however, the set operation must be taken into account. (The complement of 'All x = A' is 'There is an x != A', and not 'All x != A'). This has been changed in just that way.
  This changes the results of filters, if filters are used via relations together with the complement option. If the relation is empty, by definition the object does not comply with the filter condition. Since the complement now applies to the entire row, objects whose relation is empty are contained in the filter result if the complement option is activated.
  The generation of complements on the highest level, thus for the entire filter, remains unchanged. **(12042)**

PrT Assignment:

- ⛔ ICA calculation according to HCM 2010: With the lanes L+LTR, or L+LR accordingly, the lane group of the exclusive left turning lane was not loaded. This bug was fixed. **(12116)**

PuT Assignment:

- ⛔ Skim matrix calculation with PuT-Aux: The skim matrix calculation returned incorrect values for paths containing several consecutive path legs using a PuT-Aux transport system. The error has been fixed. This might lead to changed PuT skim matrix calculation results, if PuT-Aux transport systems exist. **(12106)**

12.52-06 [76177]   2013-01-21

➕ New Features and Changes

COM Interface:

- ➕ Cancelling Map Matching: There is a new parameter to restrict the shortest path search in the context of Map Matching, i.e. only those paths are regarded whose costs stay below the specified limit. Moreover, the global variant of the algorithm no longer provides a match, if there is no shortest path between two entry points. **(11701)**

Timetable Editor:

- ➕ Duplicating vehicle journeys: When duplicating a coupled vehicle journey, in the coupled section now all attributes of the other vehicle journeys which are coupled with the duplicated vehicle journey are copied to the vehicle journeys which are coupled with the copy of the duplicated vehicle journey. Thus, standard vehicle journeys are no longer generated. **(11516)**

✅ Fixed Bugs

Add-Ins:

- ✅ 2D-Isochrone -> POI: The temporarily created shapefile is no longer saved to the Add-In folder, but to the user directory. In this way, problems with regard to access rights can be avoided. **(12022)**
- ✅ Add-In POI -> FareZone: Due to technical reasons and since this functionality is not required, this Add-In can no longer be performed as part of the procedure sequence. Furthermore, German umlauts and special characters in the labels of involved objects are now handled correctly. **(12061)**

COM Interface:
- ✅ IMessage: When errors occurred, the IMessage objects and IMessages containers themselves generated modal error messages under certain circumstances which used to hinder the continuation of the program course. This bug was fixed. **(12064)**
- ✅ Map Matching: The incremental algorithm of the Map Matcher used to cause a program crash in the event that for the first entry point links being located in the snap radius were available but all of them were neither active nor permitted for the transport system in question. This bug was fixed. **(12068)**
- ✅ Modal error messages: Under certain circumstances, various COM functions, especially filter operations, used to generate modal dialogs in the event of a errors which interrupted the execution of the COM program. This bug was fixed. **(12067)**

Data Model:
- ✅ Detectors and lanes: Network editing could lead to invalid references from detectors to lanes which sometimes caused a program crash. This bug was fixed. **(12018)**
- ✅ Distance-based fares in the fare model: The interpolation between fare levels of distance-based fares works correctly now. **(12070)**
- ✅ Node geometry and number of lanes per link: The node geometry was not correctly adjusted to the modified number of lanes per link if there existed pockets which were located between through lanes. This bug was fixed. **(11954)**

Dialogs:
- ✅ Dialog 'Create vehicle journey(s)', 'Regular services' tab: In this dialog, the start time and the end time of the regular service time interval used to be displayed in seconds, if the attribute 'Departure' was not displayed in the tabular timetable. This error has been fixed. The format for the display is still taken from the attribute 'Departure', but a useful standard format is now selected if this attribute is not displayed in the tabular timetable. **(12017)**
- ✅ Multi-editing vehicle journey items: Opening the 'Multi-edit vehicle journey items' dialog used to cause a Visum crash if no user-defined attribute had been defined for vehicle journey items. This bug was fixed. **(12023)**
- ✅ Reading graphics parameters: If graphics parameters (for POI categories which are not defined in the network, for example) are read from file, unnecessary error messages about missing image files will no longer be returned. **(11929)**

Filters:
- ✅ Filtering network volumes: Activating the option "Filter network volumes" sometimes caused a program crash if the filter settings included a PuT paths level condition which used the 1:n relation to the path legs. This bug was fixed. **(11874)**
- ✅ Menu File > Open > Network / Menu File > Open version: When loading another network or version from file, the PuT path filter is no longer evaluated which means an acceleration of the process. **(12016)**

Graphical Procedures:
- ✅ Deleting flow bundle paths: Deleting paths which result from flow bundle calculations will no longer cause a program crash. **(11783)**
- ✅ Isochrones: Now, the network object which has been selected for the computation of isochrones remains visible even if a different network object type is selected on the network object toolbar. As a prerequisite, however, the graphics layer 'Links' needs to be active. **(12062)**

Graphics:
- ✅ Catchment areas of stops: Now, the size of a stop catchment area is correctly calculated even if the used projection does not regard [meter] for the calculation. **(11714)**
- ✅ Min and Max values for bars: For attributes with sub-attributes, neither the unit nor the number of decimal places used to be added to the Min/Max value display derived from the values of the attribute selected for a bar. This bug was fixed. **(12055)**

- ✅ Print output: For print output and page preview, the backgrounds provided as vector files are now correctly cut (concerns Shape and WMF formats). **(6615)**
- ✅ Transfer display of regular services: Under certain circumstances, the display did not include arrivals. This bug was fixed. **(12013)**

Junction Editor:
- ✅ Attribute 'Has Central Island': Drawing in the upper view now correctly regards this leg attribute (please refer to page 'Geometry'). **(12066)**
- ✅ Detector view: Leaving the detector dialog via 'Cancel' will no longer call the lane view. Furthermore, creating a detector will automatically select the corresponding column now. **(11905)**

Listings:
- ✅ Analysis rows (sum, average, etc.): Up to now, the analysis rows were sometimes calculated more often than necessary. This is now prevented. **(8959)**
- ✅ Input while aggregation is active: The input of an invalid value in the aggregate list view (possible only with aggregate function 'Compare') used to return the resulting error message for each object regarded by the list row. Now, the error message is returned only once. **(12011)**
- ✅ Number of columns after reading a version file: If a POI listing contained a UDA column defined for a specific POI category, this column was not restored after reading in the version file. This error has been fixed. **(12069)**
- ✅ PuT Assignment statistics: During the procedure execution via the COM interface, this list is once more accessible again. Accordingly, the scripts which are run as procedures can retrieve this data. **(12051)**

Main Window:
- ✅ Even if the tool window 'Matrices' has not been entered yet, access to the menu items under 'Demand > Matrix Editor' is provided. **(12003)**
- ✅ The keys Page-Up and Page-Down: With either key, zooming in the network editor view is possible again. **(12074)**

Matrix Editor:
- ✅ Editing the column width: Under certain circumstances, a mouse click on the column separator between the last two columns caused a program crash. This bug was fixed. Furthermore, a click on a column separator will no longer call unwanted browsing through the view. **(11525)**

Network Comparisons:
- ✅ Version comparison with network loaded in the background: Even if a filter with references to comparison attributes in a term in brackets is active, deleting a version comparison with a netwok loaded in the background will no longer cause a program crash. **(12012)**
- ✅ Version comparison with transferred attributes: The dialog which determines the attributes to be transferred from the comparison network for a version comparison on the basis of attributes did not display attributes which are not contained in the network file but in the demand file. As a consequence, these attributes could not be compared with this variant of the version comparison. The error has been fixed. The version comparison with a loaded network in the background was not affected by this. **(12072)**

Network Editor:
- ✅ Click positions: In certain cases, the click position was different from the pointer position when clicking in the network window. Accordingly, unintended nodes were sometimes selected in the 'node' mode, for example. This bug was fixed. **(12006)**
- ✅ Connecting links: The connection of two links with length = 0 in each case and a stop point located on either link caused an invalid state of the data model, since the two stop points were placed at the RelPos 0 on the new link. Subsequently, network processing was not possible. This bug was fixed. **(11996)**
- ✅ Editing paths: Editing the paths resulting from a Tribut assignment sometimes caused a program crash. A crash happened when all paths were deleted or if Undo was called after the deletion of a single path. This bug was fixed. **(11077)**

✅ Editing the shape of the course of coupled line routes: Removing a 'dead end' link will no longer cause a program crash when re-routing the course of a line route which has a coupled time profile.
This bug only occurred if the line route of the coupled time profile was not included in the selection for joint re-routing, which means it was implicitly re-routed in this case. **(12026)**

✅ Specifying the course of coupled line routes: If a line route is shortened to a line route item which is no profile point and the coupled section has to be shortened accordingly, the coupling is retained now as long as possible. For this purpose, the new end point becomes a profile point of the coupled time profile. Furthermore, shortening a line route to a stop point which is traversed multiple times used to return errors in previous versions, since under certain circumstances the involved coupled sections were not shortened correctly. This bug was also fixed. **(12048)**

PrT Assignment:

✅ ICA, RBC: With fully-actuated RBC control strategies it was possible, that negative capacities were calculated due to incorrect signal control modeling (missing barrier). Now, the capacity is set to 0 in this case. **(12015)**

✅ ICA, reports: In the ICA reports, the entry in the 'Method' field was sometimes incorrect since the program did not take into account whether or not the global method was overwritten by the node's local ICA calculation method. This bug was fixed. **(11425)**

✅ ICA, signalized, HCM 2010: For nodes with through lanes but no left-turns (no right-turns in left-side traffic, accordingly) instable calculation results could have been returned. Usually, the deviations were in the range of 0.01 to 0.1 for wait time and queue length values. This bug was fixed. **(12025)**

✅ ICA, signalized, HCM 2010: With lane configuration L, L+T, R+T (split phasing for left-turn inlcuded), the exclusive left-turn did not receive any volume. This bug was fixed. **(12019)**

PuT Assignment:

✅ Skim calculation with MPA: The skim calculation with MPA sometimes returned the skim value 0 for OD pairs without paths, though the user-defined value (default 99999.00) pre-set in the general procedure settings was the correct value. This bug was fixed. **(12004)**

PuT Passenger Survey:

✅ Flow bundle via paths from direct assignment: The program will no longer crash if the flow bundle is calculated for the paths resulting from the direct assignment, which include unprocessed or implausible path legs. Such a path is contained in the flow bundle iff some plausible path leg fulfills the flow bundle condition. **(12071)**

Timetable Editor:

✅ Line block selection: Now, the line block selection is reset less frequently than it used to be. Especially when saving or opening a version file the line block selection is kept now, thus the view is restored. **(11674)**

✅ Shifting a vehicle journey to another line route: In previous versions, a vehicle journey could not be shifted from the current line route to another one in the 'Edit vehicle journey' dialog, if the first one in the alphabetical order of time profiles associated with the new line route had a coupled section that exceeded either the start stop point or the end stop point of the vehicle journey.
To avoid this, the program verifies first now whether or not there is a time profile with the same name, whereas the first one in the alphabetical order of time profiles is no longer regarded. If this time profile has a coupled section exceeding one of the stop points in question, or if such a time profile cannot be found, the first one of the time profiles without coupled sections will be chosen. Accordingly, the conflict may occur only if ALL time profiles had coupled sections at the particular position. In this case, the vehicle journey actually cannot be shifted to the new line route without changes to the first or last stop point. **(11948)**

VISUM Files:

✅ Open network, RbcPatternSignalgroup: The 'Read network additively' settings are regarded correctly now. **(12044)**

✅ Reading procedure parameters from (.par) file: Also via the 'File' menu, the selective reading of PAR files works correctly now (menu File - Open - Procedure parameters...): Leaving the option 'Procedure sequence' unchecked for reading will no longer clear the current procedure sequence, and leaving the option 'General procedure settings' unchecked for reading will no longer overwrite the current general procedure parameters. **(12005)**

⚠️ **Breaking Changes**

PrT Assignment:

⚠ ICA, signalized, HCM 2010: For nodes with through lanes but no left-turns (no right-turns in left-side traffic, accordingly) instable calculation results could have been returned. Due to the removal of this error, deviations may result from the assignment with ICA. **(12025)**

⚠ ICA, signalized, HCM 2010: With lane configuration L, L+T, R+T (split phasing for left-turn inlcuded), the exclusive left-turn did not receive any volume. This bug was fixed. **(12019)**

12.52-05 [75659]   2012-12-21

⊕ **New Features and Changes**

Dialogs:

⊕ Aggregate lines: The dialog 'Aggregate line routes and time profiles' now preserves the settings during a Visum session. **(11814)**

⊕ Filter: The label for the operator 'is contained in' changed to more precise terms in some cases. For set-like attributes such as TSysSet etc. it is still called 'Is contained in', while for numerical attributes the label was changed to 'within (including bounds)'. **(11590)**

Procedure Sequence:

⊕ Evaluation add-in: The evaluation with the reporting add-in can no longer be run as second part of a procedure step, but as an independent procedure step. Consequently, the 'Evaluation' and 'Evaluation configuration' columns no longer exist in the procedure sequence.
When reading old files (versions, par and xml files), the settings of the reporting add-in are retained by adding them as an independent procedure step at the end of the procedure sequence. It needs to be placed in the correct position of the procedure sequence once. In the vai file of add-ins, the AddInTandemOperation tag becomes obsolete, i.e. from now on it will not be read anymore. **(11936)**

Visum Files:

⊕ File type for reporting: A new file type 'Other output data' is provided which can be used for standardized or individual evaluations, for example for the reporting add-in. **(11397)**

✓ **Fixed Bugs**

COM Interface:

✓ IMessages: The error message texts for COM exceptions generated by Visum (exception errors) are now included in the IMessages Container. **(11486)**

✓ LoadVersion / IMessages: Now, additional error messages are inserted in the IMessages Container when the method LoadVersion is executed, for example if the given file name is invalid. **(11487)**

COM:

✓ Graphic Parameters: Visum no longer crashes if you use the Undo command after inserting an additional class into an existing classification via COM. **(11953)**

✓ Subnetwork Generator via COM: When calling the subnetwork generator via COM, an offset of 0 is now permitted for cordon zones. Up to now this could only be done in the dialog. **(11982)**

Dialogs:

✓ Edit screenline: The grid of the screenline dialog which displays the values of indirect attributes (via relations to the screenline links) could not display certain attributes. This has been fixed. **(11913)**

Graphic:

✓ Undo for graphics parameters: Visum no longer crashes when certain changes to graphic parameters are reverted using the Undo-function. **(11974)**

Listings:

✓ Drawing marked objects during synchronisation: An upper limit of 100 objects usually takes effect in synchronized lists. If more than 100 objects are marked in the list, the network window shows no visible marking, but the status bar displays a note. This upper limit however did not take effect in item lists and the note in the status bar was not displayed long enough. Both errors have been corrected. **(11696)**

✅ Path-lists and Flow bundles: When path lists were open and limited to the flow bundle paths, changes to the flow bundle query would immediately result in updates to the list, instead of only after actually re-calculating the flow bundle. This was fixed. As a result, the path lists now always match the network volumes and some performance issues and some particular crashes were resolved. **(11834)**

✅ Visum no longer crahses when flow bundle paths are shown in the PrT path list and the flow bundle has been calculated using the option 'Alternative routes'. **(11824)**

Network Comparisons:

✅ Deleted relations: Visum no longer crashes during the creation of a version comparison with the option 'Change link bars automatically to differences' if the link bars reference an indirect attribute based on a relation which no longer exists (e.g. due to a deleted POI-Category or a deleted version comparison on the network level). **(11989)**

✅ Model transfer files and network merge mode: In the network merge mode, you can no longer create model transfer files as it leads to useless results. **(11966)**

Network Editor:

✅ Splitting links: Splitting of links now also possible, when the link carries stop points and has a 'Length'-value of 0. Splitting is still not possible for links with stop points, if 'Length' and 'Length polygon' are 0 for the link in both directions.
Polygonlänge 0 sind. **(11969)**

Other Procedures:

✅ Formula matrices: Visum no longer crhashes when using formula matrices within multi-threaded procedures, e.g. as utility terms in VISEM. **(11983)**

PrT Assignment:

✅ ICA, two-way stop: In case of turns on shared lanes, the wait time and the percentile of the queue length were wrongly calculated, if the capacity was 0. This error has been fixed. **(11939)**

✅ LUCE: In the LUCE assignment, very steep VD-functions could lead to numerical instabilities and thereby to wrong assignment results. This was fixed. **(11886)**

✅ LUCE: Visum no longer crashes during warm start when only few parts of the existing assingment can be transfered and the network is large and highly congested and uses steep VD functions. **(11944)**

✅ Warmstarting LUCE: When the LUCE assignment can only transfer the existing assignment results for few zones during warm starting, it will switch to the normal assingment mode without warm start and thereby completely dicard the existing assignment. **(11946)**

PuT Assignment:

✅ Headway-based assignment: The headway-based assignment could produce unsteady results (i.e. deviant results when calculating the procedure several times with the same network and the same parameters), if stops with several stop areas existed on a section of parallel time profiles with several possible transfer points. This error has been fixed. **(11128)**

✅ Reading of connection files: Visum refused to read connection files not containing volumes and fares but having the flag 'fares per DSeg' set, when at the same time the network setting for fares was set to 'none' by complaining about non-matching DSegs. This works now, as DSegs can be ignored in this case. **(11988)**

✅ Repeating the headway-based assignment: Repeating the headway-based assignment several times no longer leads to a crash, e.g. when used within a demand model with feedback loop. **(11026)**

Timetable Editor:

✅ Hide selected stops: The icon for 'Hide selected stops' now again indicates the current display state. **(11943)**

✅ volume bars, text sizing factor: When a version file containing a graphical time table editor with volume bars, but no actual volumes was opened and the timetable editor view restored thereby, the volume bars were not displayed even after voumes were calculated through an assignment. This was fixed. Furthermore, the text sizing factor defined in the graphics parameters on page 'Basis' is now better respected in the graphical timetable editor. **(11735)**

VISUM Files:

- ✅ Graphic parameters: Visum no longer crashes when reading graphics parameter files containing a legend with display settings for GIS-Objects of a GIS-category not existing in the current network. **(11956)**
- ✅ Options for Scenario Management: The XML-files for options now store semicolons in the settings for editors for different file types. **(11920)**
- ✅ Whe reading networks additively, conflict resolution by key offset is no longer possible for signal groups and RBC data. The key of both types of data have actual semantics, which renders insertion of objects with new IDs pointless. **(11984)**

⛔ Breaking Changes

COM Interface:

- ⛔ IMessages: The error message texts for COM exceptions generated by Visum (exception errors) are now included in the IMessages Container. **(11486)**

Procedure Sequence:

- ⛔ Evaluation add-in: The evaluation with the reporting add-in can no longer be run as second part of a procedure step, but as an independent procedure step. Consequently, the 'Evaluation' and 'Evaluation configuration' columns no longer exist in the procedure sequence.
  When reading old files (versions, par and xml files), the settings of the reporting add-in are retained by adding them as an independent procedure step at the end of the procedure sequence. It needs to be placed in the correct position of the procedure sequence once. In the vai file of add-ins, the AddInTandemOperation tag becomes obsolete, i.e. from now on it will not be read anymore. **(11936)**

PrT Assignment:

- ⛔ LUCE: In the LUCE assignment, very steep VD-functions could lead to numerical instabilities and thereby to wrong assignment results. This was fixed. Due to this change, results of LUCE assignments can differ from previous versions. **(11886)**

PuT Assignment:

- ⛔ Headway-based assignment: The headway-based assignment could produce unsteady results (i.e. deviant results when calculating the procedure several times with the same network and the same parameters), if stops with several stop areas existed on a section of parallel time profiles with several possible transfer points. This error has been fixed. Exclusively in such cases, the change might cause varying assignment results once. **(11128)**

12.52-04 [75358]   2012-12-13

➕ New Features and Changes

Add-Ins:

- ➕ POI->FareZone: Using the 'POI->FareZone' add-in now allows for the generation of fare zones for POIs of various POI categories. **(11756)**

Dialogs:

- ➕ 'Edit link' dialog: In this dialog it is no longer possible to enter negative values for the attributes Toll_PrTSys, NumFarePoints and Cost 1/2/3 (negative values are not permitted anyway). **(11866)**
- ➕ TFlowFuzzy procedure parameters: In the parameter dialog of the 'Demand matrix correction (TFlowFuzzy)' procedure it is now obvious, that for screenlines the procedure takes only those paths into account which cross the screenline in the given direction. **(11846)**

Foreign Formats:

- ➕ railML import: If changing trainParts means a change of the day at the same time, then the valid day of the subsequent trainPart items is shifted by the number of previous day changes if the departure is before the previous arrival (which means that shifting has not explicitly been modelled already with the subsequent trainPart item). Accordingly, departures of later trainPart items on the first calendar day may be dropped. If so, a message will be traced to the message file. **(10231)**

Main Window:

- ➕ Icon provided for screenshot functionality: Any window that allows for the screenshot functionality now provides an appropriate icon in the associated toolbar; thus, the function can directly be called. **(6230)**

Procedure Sequence:

➕ Column selection: The columns in the procedure sequence grid have been rearranged: For the evaluation and its configuration as well as for the 'Code' attribute please refer to the outermost right section. The 'Executed' attribute was dropped (cf. ID 11390). The start and end times per operation execution appear right-justified in their columns now. **(11793)**

PrT Assignment:

➕ ICA: ICA calculations can now apply the HCM 2010 method to actuated and semi-actuated controllers. **(914)**

PuT Assignment:

➕ Additive reading of CON files: Connection files (*.con) can now be read additively. This is done via the 'Connection import' procedure, if a user-defined attribute with ID 'CONNECTIONIMPORT_READ_ADDITIVE' has been defined for the network and the attribute value is different from 0. **(11565)**

Schematic Line Diagram:

➕ Edge bundling: If several edges have been combined to a single edge course (superimposed headways or couplings) and intermediate stops are added to the network graph or removed from it, then these super-edges are retained now. **(11792)**

➕ Times of departures/arrivals within 2-hour intervals: The attribute 'MostFrequentTwoHourlyDepartureTimes' does no longer return minute values in the range of 0 and 119, since now the range is 0 and 59. Whether the even or the odd hour is concerned is now indiacted by the '+' oder '-' flag prior to the number, as it used to be with the 'DepartureTimesTwoHourly' attribute. For the former way of data display, call the appropriate one of the new attributes 'MostFrequentTwoHourlyArrivalTimesUnformatted' and 'MostFrequentTwoHourlyDepartureTimesUnformatted'. **(11887)**

✅ Fixed Bugs

Add-In:

✅ 'Buffers around PuT lines': The 'Buffers around PuT lines' add-in will no longer fail if line routes are defined without line route course. Furthermore, it works faster now and error handling as well as the handling of large polygons was improved. **(11841)**

✅ FareZone -> POI: The 'FareZone -> POI' add-in will no longer crash when being executed as one of the operations in the procedure sequence. **(11891)**

✅ Google Transit Feed: The program will no longer crash if the file 'stop_times.txt' does not contain values in the 'arrival time' and 'departure time' columns or if the time data for a 'trip_id' are not stored in consecutive rows. **(11822)**

✅ Reporting PrT: In previous versions, the program used to show incorrect assignment input parameters if the demand segment was changed for the assignment. This bug was fixed. **(11895)**

ANM:

✅ Export parameter file (anmp): Reading ANM export parameters from file used to return incorrect warnings if values were missing for the PuT parameters Priority and Direction. These warnings will no longer pop up. **(11844)**

✅ Sometimes, the ANM export produced a file which could not be read in subsequently due to faulty detector data (duplicated keys). Now, the detector data is exported in a way which allows for later import without problems. **(11904)**

COM:

✅ ClassIDs: For Service Pack Visum 12.52-03, the ClassIDs of the COM server have been changed without necessity. Thus, COM applications using Early Binding to include Visum did not work. These ClassIDs were reset to their original state. To continue using these applications unchanged please skip SP Visum 12.52-03. COM applications using Late Binding (Python or VBA, for example) are not concerned. **(11871)**

✅ TSys-based shortest path search: If this search did not return links when being performed via the COM interface then an undesireable error message used to appear (a path does not have to include links, for example, a path might consist of connectors only). This bug was fixed. **(11842)**

Data Model:

- ✅ Peak Hour Factor: For the attribute 'ICA Peak hour factor volume adjustment' , the permitted value range has been restricted to 0.25 - 1.00. **(11865)**
- ✅ RBC controls: Converting RBC controls to signal group-based controls now discards any RBC data. Accordingly, especially model transfer files work correctly now. **(11859)**

Demand Procedures:
- ✅ Estimate gravitation parameters (Kalibri): If this procedure terminates due to faulty cell values or because the values do not meet the upper/lower interval limits, the error message will no longer display the index numbers of the rows and columns, but the numbers of the concerned zones. **(11893)**

Dialogs:
- ✅ 'Graphic parameters' dialogs: In the graphic parameter dialogs of network, schematic line diagram, timetable editor and transfers regular display, changes to the classification settings could have caused a program crash, if the dialog was left via the 'Cancel' button and changes were reset subsequently. This bug was fixed. **(11762)**
- ✅ Attribute selection: In previous versions, aliases representing string-type attributes were provided with the numeric aggregate functions. The selection of such an alias used to cause a program crash. This bug was fixed. **(11870)**
- ✅ Graphic parameters, classification of point objects: With an attribute of the text type, the operation 'Redefine all classes' did not work correctly. If a text attribute was selected in this dialog, this used to be not stored. Instead, the text attribute which was previously selected for the first of the classes was allocated to all all classes. Dieser Fehler wurde korrigiert. **(11835)**
- ✅ Matrix selection: If a zone matrix was to be selected, e.g. as demand segment-specific OD matrix, in a network including only external matrices then the matrix tree called in this context used to appear empty. Clicking the root node ("All matricen") did not call the correct matrix but listed one of the not complying external matrices which then was allocated to the demand segment in question. This bug was fixed. **(11621)**
- ✅ Procedure parameters for the 'Go to the procedure' operation: The 'Parameters: Go to the procedure' dialog has been adapted to the real behaviour. The jump back will not happen if in the first inequality the equality is reached for at least one network object. **(11919)**
- ✅ Shortest path search criteria: In various dialogs, the criterion selected for the shortest path search was ignored. Always the 'direct distance length' used to be regarded instead. That was the case in the 'Complete line routes' dialog when reading a network additively, and in the specific 'Specify course' dialogs for line routes or system routes or PrT paths. **(11861)**

Filters:
- ✅ Reading *.ane files: Previously, filters were not updated when *.ane (active network elements) files were read, though updating is required since the loaded data may change the 'active' status of the network objects. This bug was fixed. **(11112)**
- ✅ Response to different network volumes: Volume changes due to modified OD pair filter settings (with active option "Filter network volumes") used to be ignored in previous versions, i.e. other filters taking volume attributes into account did not re-evaluate the modified network state. This bug was fixed. **(11739)**

Foreign Formats:
- ✅ Access Export: The export to Access will no longer fail though the network includes short distance fare items. **(11804)**
- ✅ Access export: When exporting strings to Access databases, strings of 256 or more characters used to be excluded (due to the maximum length of 255 in Access). Now, those strings are cut and a warning will be returned. **(11840)**
- ✅ ICA report including russian characters: The node name has been unreadable under certain circumstances. This bug has been fixed. **(11997)**
- ✅ ICA reports with Russian characters: ICA reports with Cyrillic characters could not be opened in Excel subsequently. This bug was fixed. **(11807)**

- ✅ railML Import: Two rare errors were fixed:
  1) If a trainPartSequence which is not the first trainPartSequence of the train item, includes multiple trainParts with various route courses and/or times (and disjunctive valid days accordingly), then too many valid days used to be allocated to individual vehicle journey sections.

  2) If the end of a trainPart is an OCP that is missing in the VISUM network, then this trainPart used to be not imported, if departure and arrival times were different at the last trainPart with time data in the VISUM network. **(11796)**

Graphical Procedures:

- ✅ PuT flow bundle: The flow bundle condition check performed for links for PuT paths was not correct, if the path leg started on a link-based stop point or ended there. Subsequently, paths using the flow bundle link were not recognized as flow bundle paths under certain circumstances. This bug was fixed. **(11868)**

Graphics, Procedure Sequence:

- ✅ No more crash caused by drawing while a procedure is running. In the concrete case, drawing was enabled by a script which was part of the procedure sequence, causing a crash in later procedure steps due to temporarily inconsistent data structures. **(11923)**

Graphics:

- ✅ Legend: Drawing a legend will no longer cause a program crash if a line bar is displayed but no valid scaling attribute has been selected for this line bar. **(11879)**

- ✅ Print output: The print output seemed to improve data the printer could not unambiguously interpret. Apparently this could have caused problems in Adobe Acrobat X Pro applications. **(11811)**

Junction Editor:

- ✅ Crash due to empty grid: If there are no detectors, clicking the right mouse key in the 'Attribute name' column in the 'Detectors' grid will no longer cause a program crash. The same used to occur in other empty grids, e.g. in the 'Crosswalks' grid. This bug was fixed. **(11808)**

Listings, Network Editor:

- ✅ Aggregation with vehicle journey items list. The program will no longer crash if line routes and/or time profiles are aggregated while a vehicle journey items list is being open. **(11869)**

Main Window, COM:

- ✅ Window size definition: When the size of the window is specified (interactively or via COM) the size of any tool window docked to it remains unchanged. Resetting the dialog positions will reset the user-defined size of any window to its initial size. **(11938)**

Matrix Editor:

- ✅ Projection of an external matrix: The program will no longer crash if an attribute file is read which provides data for the projection of an external matrix. **(11940)**

Network editor:

- ✅ Aggregating lines: Aggregation of lines used to keep the specific walk times in previous versions, whereas wait times could have got lost. This bug was fixed. **(11789)**

- ✅ Copying background texts: Now, the Copy command is available again for background texts. In the context menu, the entry no longer appears grayed-out. **(11826)**

- ✅ Line route specification with fixing: If the start point had been fixed for the shape specification of a line route or system route, this fixed start point was abandoned sometimes depending on the routing. This bug was fixed. **(11901)**

Procedure Sequence:

- ✅ Messages: When executing an operation of the procedure sequence, only the first 500 messages will be stored and displayed. Further messages will merely be traced to the message file. After more than 500 messages, the content of the attribute 'Messages' will refer to the message file. **(11773)**

- ✅ Time stamp and status information: For operations in the procedure sequence, the status information and the time stamp of the most recent execution are no longer discarded in the case of certain changes to the network or when the procedure sequence is initialized, since it cannot be reliably defined, until when the result of an operation remains valid. On the other hand, the status information can explicitly be reset for either all or only the marked operations. Accordingly, the 'Executed' attribute is no longer required, since this is indicated by the displayed 'Start time'. Thus, the attribute does no longer appear in the procdure sequence. **(11390)**

PrT Assignment:

- ✅ ICA calculation according to HCM 2000: When calculating the node impedance according to HCM 2000, the 'Parking Adjustment Factor f_p' used to be applied to all lane groups, not only to the right turns (or left turns with left-side traffic). This bug was fixed. **(11850)**

- ✅ ICA calculation according to HCM2000: When calculating the node impedance according to HCM2000, the 'Bus Blocking Adjustment Factor f_bb' used to be applied to all lanes, not only to the lane group which is affected by bus stop operations. This bug was fixed. **(11849)**

- ✅ ICA, All-way stop: Now, queue lengths are calculated again. **(11911)**

- ✅ ICA, All-way stop: Sometimes, the calculation of the geometry group was not correct, if there was a leg with three or more lanes. Now, also for cases which have not explicitly been defined in HCM 2000, the calculation is based on HCM 2010. This may change the results of the assignment with ICA. **(11910)**

- ✅ ICA, All-way stop: The calculation method has been corrected. **(11876)**

- ✅ ICA, out-dated node leg data: When data is read from old version files, the attributes 'Has Bypass' und 'Is Channelized' are now set in a way that ICA results (at roundabouts, for example) will not change. **(11922)**

- ✅ ICA, roundabouts, HCM 2010: Now, the calculation takes also the leg attribute 'Has Bypass' into account. In previous versions, only the attribute 'ChannTurnLen' used to be regarded. **(11915)**

- ✅ ICA, roundabouts, HCM 2010: The distribution of volumes to lanes was changed. It is no longer possible that traffic turning left uses a second lane though only one lane permits turns to the left. **(11916)**

- ✅ ICA, signalized, HCM 2000: The calculation of the impact caused by pedestrian flows has been corrected. Accordingly, the assignment with ICA might return different results. **(11402)**

- ✅ ICA, signalized, HCM 2010: The delay computation has been corrected. Various formulas for the calculation of g_q and g_f use the saturation volume per lane now. In previous versions, the saturation volume per lane group was used by mistake. **(11855)**

- ✅ ICA, signalized: In special cases, the determination of one aspect of the delay (uniform delay) for permitted-protected turns to the left was not correct - the calculated delays were too high. This bug was fixed. This may change the results of the assignment with ICA. **(11907)**

- ✅ ICA, Two-way stop, HCM 2010: Taking the traffic volumes of U-turns in major flows into account has been corrected. Accordingly, the ICA calculation results will change. **(11877)**

PuT Assignment:

- ✅ Cancel headway-based assignment: Now, the headway-based assignment responds faster to the cancellation by the user. **(11926)**

- ✅ Headway-based assignment with fares: Time profile items without stop point in the network will no longer cause a program crash during the headway-based assignment with fares. **(11912)**

- ✅ Maximum 'Independence' time slot: The value 0 does not make sense as the maximum time slot for the definition of the independence in the framework of the timetable-based assignment's choice parameters. Nevertheless, 0 could be entered in previous versions. This is no longer possible. The value 0 is checked for when the procedure execution starts; with value 0, the operation will not be executed. **(11892)**

PuT Passenger Survey:

- ✅ Result file, external projection factor: The output file optionally generated as a result of the 'Read survey data' procedure could subsequently not be read from file as multi-row survey data. This bug was fixed. Furthermore it is now possible to read the path attribute 'External projection factor' from multi-row survey data. For this purpose, the attribute has to be set in each row of a data record; in the case of different values, the very last value will be used. **(11836)**

Schematic Line Diagram:

- ✅ Crash with two-stage classification: The program will no longer crash when drawing a schematic line diagram with two-stage classification of edge courses, if one of the inner classes has multiple stroke layers. **(11858)**
- ✅ Two-hourly display: This display mode of departure and arrival times and most frequent departure and arrival times will no longer show '+60' for the value '60min', but '-00' instead, since it already belongs to the odd hour. **(11889)**

Subnetwork Generator:

- ✅ Fare model without PuT: Creating a subnetwork will no longer fail if the network includes a fare model and a demand segment which exclusively uses transport systems of the PuT-Walk mode. **(11843)**

Timetable Editor:

- ✅ Focus problems in consequence of messages: If duplicating a vehicle journey returned a message (e.g. due to line costing results which were discarded), then pressing a key such as DELETE for example did not work in previous versions, though the copied vehicle journey was subsequently marked. This misfeature occured in the tabular timetable and also in the graphical timetable. This bug was fixed. **(11837)**
- ✅ Restore window section: Restoring the window configuration of a version file will set the correct graphical timetable window section even if the timetable is invisible in the background. **(10829)**

VISUM Files:

- ✅ Selective reading of graphic parameters: In previous versions, selective reading of graphic parameter files did not completely ignore the settings for the display of turn volumes. Selected turn volumes used to be reset though these were not selected for reading. This bug was fixed. **(11931)**
- ✅ Unsymmetric external matrices: Since the introduction of asymmetrical external matrices in Visum, there had been a hidden bug in the binary format of those matrices. Only matrices with different numbers of rows and columns had been concerned. Usually saving the matrix to file had produced a corrupt matrix file which could have caused a program crash when being read in Visum. In any event, the corrupt matrix file stored faulty row or column totals. This bug was fixed, the file format was modified. **(11171)**
- ✅ Version file with Matrix Editor window: Reading a version file created with Visum version 11.5 or 12.0 failed if this file stored a Matrix Editor window with disabled labels. **(11848)**

⚠ Breaking Changes

COM:

- ❗ ClassIDs: For Service Pack Visum 12.52-03, the ClassIDs of the COM server have been changed without necessity. Thus, COM applications using Early Binding to include Visum did not work. These ClassIDs were reset to their original state. To continue using these applications unchanged please skip SP Visum 12.52-03. COM applications using Late Binding (Python or VBA, for example) are not concerned. **(11871)**

PrT Assignment:

- ❗ ICA calculation according to HCM 2000: When calculating the node impedance according to HCM 2000, the 'Bus Blocking Adjustment Factor f_bb' used to be applied to all lanes, not only to the lane group which is affected by bus stop operations. This bug was fixed. Accordingly, the assignment with ICA will produce different results for calculations based on HCM 2000. **(11849)**
- ❗ ICA calculation according to HCM 2000: When calculating the node impedance according to HCM 2000, the 'Parking Adjustment Factor f_p' used to be applied to all lane groups, not only to the right turns (or left turns with left-side traffic). This bug was fixed. Accordingly, the assignment with ICA will produce different results for calculations based on HCM 2000. **(11850)**
- ❗ ICA, All-way stop: Sometimes, the calculation of the geometry group was not correct, if there was a leg with three or more lanes. Now, also for cases which have not explicitly been defined in HCM 2000, the calculation is based on HCM 2010. This may change the results of the assignment with ICA. **(11910)**
- ❗ ICA, All-way stop: The calculation method has been corrected. This will also modify the results of the assignment with ICA if the network includes nodes of the 'All-way stop' control type. **(11876)**
- ❗ ICA, roundabouts, HCM 2010: The distribution of volumes to lanes was changed. It is no longer possible that traffic turning left uses a second lane though only one lane permits turns to the left. **(11916)**

⬤ ICA, signalized, HCM 2000: The calculation of the impact caused by pedestrian flows has been corrected. Accordingly, the assignment with ICA might return different results. **(11402)**

⬤ ICA, signalized, HCM 2010: The delay computation has been corrected. Various formulas for the calculation of g_q and g_f use the saturation volume per lane now. In previous versions, the saturation volume per lane group was used by mistake. **(11855)**

⬤ ICA, signalized: In special cases, the determination of one aspect of the delay (uniform delay) for permitted-protected turns to the left was not correct - the calculated delays were too high. This bug was fixed. This may change the results of the assignment with ICA. **(11907)**

⬤ ICA, Two-way stop, HCM 2010: Taking the traffic volumes of U-turns in major flows into account has been corrected. Accordingly, the ICA calculation results will change. **(11877)**

12.52-03 [74561]   2012-11-16

⊕ New Features and Changes

Data Model:

⊕ Relative position of stop points: The stop point attribute 'relative position' can now be edited. The minimum distance restrictions between link-based stop points still have to be satisfied, otherwise the operation will fail. **(11624)**

Dialogs:

⊕ Connecting links: The 'Connect links' dialog now mentions that not all attributes of the selected link will be adopted, and the exceptions are listed explicitly. **(11732)**

Graphics:

⊕ Drawing out window in smart map: By drawing out a window within the selected section in the smart map (Ctrl-left-drag) the result is not a zoom in the smart map, but the section in the network editor is set. **(11611)**

Installation:

⊕ Windows 8: The setup has been adjusted to the Windows 8 requirements. This includes the following: 1) As dongle driver, Codemeter 4.50b is installed instead of Codemeter 4.20. Thus, for technical reasons Visum with a single place dongle can no longer be operated via a remote desktop connection. 2) DISM (Deployment Image Servicing and Management installation) of .NET 3.5 is installed. **(11778)**

PuT Assignment:

⊕ Acceleration of the capacity-restrained assignment: The capacity-restrained timetable-based assignment runs much faster now. **(10818)**

⊕ Negative demand: The timetable-based assignment calculation now issues warnings if there are OD pairs with negative demand data. The user has the following options: Either terminate the operation or accept the warning and continue (for the OD pair in question, demand = 0 will be assumed in this case) or accept this and any further warning. The 'Calculate skim matrix (timetable-based)' procedure will issue an additional warning if the time series does not store any demand for an OD pair in the assignment time interval.
Prior to the actual calculation, the headway-based assignment procedure issues warnings if there are OD pairs with negative demand data. **(7119)**

PuT Passenger Survey:

⊕ The multi-criterion search for the shortest path towards a destination works much faster now. This affects the 'Plausibilization of survey data' procedure, if connection searches are applied (either for the plausibilization of path legs which have not been found, or for the entire preceding or succeeding part, or for the comparison of the preceding/succeeding part with a direct connection). **(11782)**

✅ Fixed Bugs

Add-Ins:

✅ Create regular timetable: With a coupled time profile, a vehicle journey number could have been allocated multiple times. In this case, an error message used to be returned. This bug was fixed. **(11727)**

Data Model:

- ✅ Average per relation: Compiling data of the 'Instant of time' or 'Time period' data type using the 'Average' aggregation function for a relation now returns result values of the 'Precise duration' type, i.e. floating point values are possible now. **(11771)**

- ✅ Conversion to RBC type: In previous versions, no sequence was generated when a signal group-based signal control (SC) was converted to an RBC-type SC in the SC list. Subsequently, this could have caused a program crash. This bug was fixed. **(11748)**

- ✅ Long strings of characters: The program will no longer crash when handling very long character strings (about 50,000,000 characters). **(11640)**

- ✅ vCur_PrTSys of links: With value 0 for the PrT travel time in the unloaded state (t0) the value of the link's speed in the loaded state (vCur_PrTSys) used to be rounded down to an integer. This bug was fixed. **(11726)**

Demand Procedures:

- ✅ Linear combination of matrices: Transformation operations on matrices which are not required in the further course of the calculation are no longer executed. In particular, this will avoid overflows during 'exp' transformations in many cases. Furthermore, the calculation speeds up due to this. Multiple procedures are concerned: Trip distribution (4-step), EVA weighting, Tour-based model - combined trip distribution/mode choice, Estimate gravitation parameters (KALIBRI). **(11764)**

Dialogs:

- ✅ Gravitation parameters: The sub-dialog provided for the Choice model (Gravitation parameters) in the framework of the procedure dialogs for Trip distribution (4-step) and Mode choice (4-step) could not be called. This bug was fixed. **(11770)**

- ✅ Input via attribute selection: In the attribute selection dialog, inputs consisting of an indirect attribute in combination with the aggregation function 'Distinct' or 'DistinctActive', alternatively, were not resolved via the 'Mark attribute from input text field in selection tree' icon and thus those attributes were not highlighted in the selection tree. This bug was fixed. **(11774)**

Foreign Formats:

- ✅ OpenStreetMap import: Additionally to the information logged to the error file, an interactive error message providing the user with a reference to the message file will appear if the configuration file of the OpenStreetMap importer contains an incorrect attribute/element. **(11687)**

- ✅ OpenStreetMap import: The import procedure responds more quickly now to the cancellation by the user. **(11688)**

Graphical Procedures:

- ✅ Survey data-based flow bundle: The flow bundle calculation based on boarding or alighting passengers at stops or stop areas or stop points respectively did not regard paths which had been derived from Passenger onboard surveys (Direct assignment procedure). This bug was fixed. **(11768)**

Listings:

- ✅ Creating an external signal control of the VISSIG type in an open SC list which is in the 'Synchronization' mode will no longer cause a program crash. **(11775)**

- ✅ Deletion of analysis time intervals: The program will no longer crash if analysis time intervals are renamed or deleted while a list is being open. **(11700)**

- ✅ Passenger transfers and walk times between stop areas at a stop: Data from the clipboard can now be pasted to the 'Transfers and stop area walk times in stop' list. Accordingly, the corresponding attribute files can be read in. **(11763)**

- ✅ PuT path list: Activating the 'Sum' evaluation row in the PuT path list while the OD pair filter was active and subsequent modification of the attribute selection for the tabular display could have caused a program crash. This bug was fixed. **(11110)**

Main Window:

- ✅ Focus when switching to the timetable editor: Clicking the 'Timetable editor' button in the 'Lines' or 'Line routes' dialog to switch to a timetable editor which is already open will immediately place the focus on the the timetable editor. Thus, any entry via the keybord will immediately address the timetable editor. **(11719)**

- ✅ Shortcuts: The shortcuts (key combinations) such as 'Ctrl+Z' for Undo or 'Ctrl+Y' for Redo now work even if the focus is on the sidebar. **(11614)**

Matrix Editor:

✓ Saving the view: Saving the matrix view in the matrix editor while the OD pair filter is being active will no longer cause a program crash. **(11445)**

Miscellaneous:

✓ Program crash when terminating the Visum session: Sometimes, the program used to crash without any apparent reason - mostly when closing the program, but also when Visum was not computing while other programs were in use. This bug was fixed. **(11746)**

Network Editor:

✓ Aggregating lines: In connection with specific transfer walk times, aggregating lines could lead to errors in the data model. In this case, neither data could be saved as version file nor other operations could be performed subsequently. This bug was fixed. **(11747)**

✓ Aggregating zones according to main zones: In the Network Editor menus, this functionality used to be disabled, thus it could not be called by the user. This bug was fixed. **(11760)**

✓ Editing POIs: Several minor problems have been solved which used to occur during POI processing in the network editor:
a) The 'Wrong argument' error message will no longer appear if several POIs are marked and then 'Edit' is called via the context menu.
b) If 'Multi-edit' is called in the 'Spatial selection mode', the 'Formula' tab will appear as known from other network objects.
c) Now, even if the 'Multi-edit' dialog is called via the context menu of the network editor the 'Special functions' tab will be visible.
d) As default value, the dialog stores the POI category which was selected for the most recently created POI, when a POI is created. **(11433)**

✓ Shift window section: The 'Shift window section' mode now terminates when switching to a different network object. **(11740)**

✓ Turns: The program will no longer crash if the network object 'Turns' has been selected in the network editor when a new network is created. **(11715)**

PrT Assignment:

✓ Equilibrium assignment: Under certain circumstances, the equilibrium assignment returned very small negative volumes if there was no basic volume when starting from an initial assignment result and adapting the route volumes to the current demand. This bug was fixed. **(11797)**

✓ ICA-based delay calculation: In previous versions, the node's LOSAvgDelay calculation according to HCM2010 took the lane group volumes into account. Instead, the volume per lane should have been regarded. This bug was fixed. **(11786)**

✓ LUCE procedure: The calculation of indicators per bush contained a bug which used to produce adverse effects in the case of very high overloads if very steep volume-delay functions were applied, or if more than one core was used for the calculation. As a result, both volumes and vehicle hours could have been missing. This bug was fixed. **(11258)**

PuT Assignment:

✓ Taking specific transfer walk times into account: Due to the dominance rule, the connection search using Branch&Bound sometimes used to discard (partial) connections to a stop area, though these need to be stored due to subsequent (with regard to the dominating connection different) specific transfer walk times. This bug was fixed. **(11613)**

✓ Vehicle journey components in the search impedance: In previous versions, the two boarding penalty components included in the vehicle journey component of the timetable-based assignment's search impedance did not refer to the correct vehicle journey item. This bug was fixed: The boarding penalty used to be derived from the first item of the vehicle journey and is now taken from the boarding item. Accordingly, the discomfort penalty is no longer determined for the first vehicle journey item, but for the boarding item. **(11761)**

PuT Passenger Survey:

- ✅ Paths are sometimes plausible and sometimes they are not: The plausibilization used to fail if the option 'Compare plausible multi-part preced./succeed. part to direct connection' was selected and then a connection search was to be calculated for either a single path leg or the entire preceding/succeeding part. Due to the path legs read in before, the plausibilization could find only direct connections for the concerned path legs. In particular, a path's plausibilization result could possibly depend on the paths for which the plausibilization had been calculated before. This bug was fixed. **(11755)**

VISUM Files:

- ✅ Separate matrix data files: The program will no longer crash if a separate matrix data file is opened whose size exceeds 4GB. **(11754)**

⛔ Breaking Changes

Installation:

- ⛔ Windows 8: The setup has been adjusted to the Windows 8 requirements. This includes the following: 1) As dongle driver, Codemeter 4.50b is installed instead of Codemeter 4.20. Thus, for technical reasons Visum with a single place dongle can no longer be operated via a remote desktop connection. 2) DISM (Deployment Image Servicing and Management installation) of .NET 3.5 is installed. **(11778)**

PrT Assignment:

- ⛔ ICA-based delay calculation: In previous versions, the node's LOSAvgDelay calculation according to HCM2010 took the lane group volumes into account. Instead, the volume per lane should have been regarded. This bug was fixed. This will change the results of the ICA calculation per node as well as results of the assignment with ICA. **(11786)**

PuT Assignment:

- ⛔ Taking specific transfer walk times into account: Due to the dominance rule, the connection search using Branch&Bound sometimes used to discard (partial) connections to a stop area, though these need to be stored due to subsequent (with regard to the dominating connection different) specific transfer walk times. This bug was fixed. This means an increasing number of connections in networks which store specific walk times. Thus, the assignment result will change. **(11613)**

- ⛔ Vehicle journey components in the search impedance: In previous versions, the two boarding penalty components included in the vehicle journey component of the timetable-based assignment's search impedance did not refer to the correct vehicle journey item. This bug was fixed: The boarding penalty used to be derived from the first item of the vehicle journey and is now taken from the boarding item. Accordingly, the discomfort penalty is no longer determined for the first vehicle journey item, but for the boarding item. If the search takes the vehicle journey-related impedance into account and if the values are not constant across the vehicle journey course, a different search result will be returned which means a deviating assignment result. **(11761)**

12.52-02 [73443]   2012-10-13

➕ New Features and Changes

Add-In:

- ➕ The Add-In *Nested Demand Model GAP Calculation* enables the calculation of the demand/supply gap for demand models which have been calculated using the Add-In *Nested Demand Model. The formula of the calculation follows the UK WebTAG guidelines.* **(10725)**

Data Model:

- ➕ Relations of system routes: A new relation has been established from the system route item to the link carrying the link stop point at which the system route item is located. The relation will be empty if the system route item is located at a node. Another relation from the system route itself to links lists up all traversed links. Links which are traversed consecutively due to a stop point on this link are listed only once. **(11582)**

Foreign Formats:

- ➕ Messages during EMME Import: Optionally, issuing these messages can be switched off now ("No further messages"). **(11588)**

- ➕ RailML Import: A vehicle journey section's number of valid days can be output to a vehicle journey section attribute now. This is particularly useful for the import into a target network without calendar. **(10922)**

Graphics, Schematic line diagram:

➕ Both the Transfers display of regular services and also the attribute bars visualizing the number of transfers in the Schematic line diagram now provide the flow bundle evaluations for all volume-representing attributes (volume, number of transfers, through passengers). **(11632)**

Listings, Graphics:

➕ Even for formula attributes which return floating-point values, a format can be selected in lists and in the graphic parameters now. **(11648)**

Network Editor:

➕ Copy line route: By default, the selection list in the dialog provided for copying line routes now highlights the name which is associated with the copied line route. If another line is selected the name will be retained - even if it has already been modified by an entry. **(11627)**

➕ Line aggregation and couplings: If couplings are separated when aggregating lines, because a coupled time profile and an uncoupled one are aggregated to a time profile in common, for example, then each separated coupling is traced to the log file now. After one or more separated couplings, a message will be issued. **(11289)**

Timetable Editor:

➕ Stops without stop event: The option 'Hide stops without stop event' does no longer work in the tabular timetable only, but also in the graphical timetable now. **(11563)**

✅ Fixed Bugs

COM:

✅ Map Matching algorithm: If the Map Matcher in the incremental mode matches exactly the coordinates of a node as start or end of the matched sequence of points, then this node will no longer be displayed as the end of an additional and actually useless link at the start ('A->B, 1.0'), or as the start of an additional link at the end ('Y->Z, 0.0') respectively. This node is now allocated to the closest required link ('B->C, 0.0' bzw. 'X->Y, 1.0'). With ID 11255, this modification has already been implemented in the global algorithm. **(11699)**

Data Model:

✅ Shortening a line route with activity protocol output: The program will no longer crash if a line route is made shorter while the activity protocol option is active (at least level 2 "All activities"). **(11669)**

✅ Strict link types: Allocating a strict link type though there is a transport system with a code starting with a lower case character will no longer cause a program crash. **(11745)**

✅ Transfer walk times: Using the relation from the stop to the transfer walk times for access to the sum (or other aggregate functions) of the transfer walk times between stop areas in a network that contains stops without stop areas will no longer cause a program crash. **(11711)**

Demand operations:

✅ The AddIn 'Nested Demand Model' calculated invalid results (even for passive zones) when the option 'Active zones only' was selected. This bug was fixed. **(11725)**

Dialogs:

✅ Background objects administration: The synchronization of the "Draw" state between the two dialog views did not work correctly: This bug was fixed. **(11090)**

✅ Parameter dialog for the headway-based assignment procedure: The assignment could not be calculated if the open parameter dialog was closed via the OK button while the default parameter settings for the weighted origin wait time were active. This bug was fixed. **(11690)**

Filters:

✅ Filter logic in hierarchical filters: If a condition is defined on a lower level of the hierarchy, sub-ordinate objects are required on the level of the defined condition which satisfy this condition. Otherwise an object on the higher level cannot be active. In previous versions, even without any sub-ordinate object on the filtered level the object could be active. Furthermore, the hierarchical filter was not always evaluated correctly when the filter conditions of a level were switched on or off. This bug was also fixed. **(10607)**

✅ Initialize filter: Initializing filters works much faster now, especially with networks storing numerous Points of interest. **(11342)**

Foreign Formats, VISUM Files:

- ✅ Shortest path searches with one origin and one destination each work much faster now. This especially affects reading a network additively and the railML import. **(11507)**

Graphics:

- ✅ Autotexts in the printing frame: In the printing frame headline, autotexts were not replaced by the correct values if a line break was included in the text. This bug was fixed. **(11228)**

- ✅ Backgrounds from OpenStreetMap: Loading OpenStreetMap backgrounds for zoom levels greater than 15 was possible in previous versions, though no map service was provided for that. Now, only zoom levels up to 15 are available. **(11164)**

- ✅ Column charts: In networks with the imperial unit system, the separate column charts windows in the network editor now always use imperial units for the display of length and speed values. **(11656)**

- ✅ Internet maps: The program will no longer crash if internet maps are downloaded as backgrounds. **(11718)**

- ✅ Overlapping sections in legend: In previous versions, the scale and the class symbols used to overlap if the latter were small-sized. Furthermore, classes in the lower section used to be drawn outside the legend if the symbol height was too small. Either bug was fixed. **(10751)**

- ✅ Placing SVG backgrounds: In previous versions, backgrounds originally created via SVG Export from Visum were not placed correctly. This bug was fixed. **(11606)**

- ✅ PuT line bars: After changes to the order of drawing in the graphic parameter settings for line bars, sometimes the graphic parameters for individual objects of the line hierarchy used to disappear. This bug was fixed. **(11573)**

- ✅ Shortest path search and print output: The print output did not completely draw the shortest path. This bug was fixed. **(11689)**

- ✅ Transfers display of regular services: The transfers display of regular services shows vehicle journeys (i.e. arrivals and departures) now even if a calendar is active and if for the time slot to be visualized a calendar day different from the first day of the calendar is selected. **(11720)**

Installation:

- ✅ Explorer entries: After the installation of PTV Visum 12.5, the Explorer no longer showed entries for 'Open version file' with previous Visum versions. Also the 'Open with...' entries used to be incorrect. Either bug was fixed. **(11618)**

Listings:

- ✅ Line block items list: The program will no longer crash if the line blocking procedure is started though the list of line block items is open with an active line block filter. **(11576)**

Main Window:

- ✅ Mode of the 'Analysis time intervals' toolbar: The 'Analysis time intervals' toolbar mode (visible / invisible / automatic) is stored in the Registry now and will be restored when the next Visum session starts. **(11295)**

Miscellaneous:

- ✅ Acitivity protocol: No more crash when inserting a node whilst the activity protocol is active. **(11751)**

Network Editor:

- ✅ Autozoom: In previous versions, Visum did not redraw the screen if the network editor as a separate window was moved out of the Visum main window and if the network section was shifted by clicking the 'Autozoom' button in the 'Find' dialog. Thus, the marking was placed in the screen center but did not fit into the displayed network. This bug was fixed. **(11598)**

- ✅ Create stop point on link: In previous versions, couplings could have been separated under certain circumstances if a stop point was created on a link in a coupling section. This bug was fixed. **(11524)**

Other Procedures:

- ✅ Cutting a sub-network: Cutting a sub-network will no longer fail if the file property 'Load matrix data from version file at the time when required' is set. **(11408)**

PrT Assignment:

- ✅ ICA calculation: If ICA is calculated for a set of nodes though ICA is not to be calculated for some of them, then the ICA results (LOS, LOS average delay) calculated for these nodes will be initialized. This may only be the case if ICA has already been calculated for a node. **(11594)**

- ✅ ICA, signalized, HCM 2000: The calculation of the factor G_f for lane groups did not regard the stage's loss time by mistake. It is now considered as the total summed up from the stage's Amber and All-red times if the intergreen determination is not based on the intergreen matrix, but on Amber and All-red. Thus, an assignment with ICA might return deviating results. **(11723)**

- ✅ Node impedance calculation (ICA): In previous versions, the flow distribution to the lanes did not always take the correct number of straight lanes into account. Furthermore, the special case of shared left/straight lanes with 'split phasing' was not regarded at all. Either bug was fixed. **(11733)**

PuT Assignment:

- ✅ Capacity-restrained assignment: Various problems have been solved which arose during the capacity-restrained timetable-based assignment. Most of them occured if several demand segments were assigned simultaneously. **(11667)**

Timetable Editor:

- ✅ Coupling in pairs in the Timetable editor:The route course section offered for coupling in pairs in the Timetable editor used to be shorter than necessary, if the course of one of the two line routes exceeded the maximum coupling section either at its start or at its end. **(11664)**

- ✅ Regular services mode: When the regular services display mode is active in the tabular timetable view, the program will no longer crash if in the graphical timetable the context menu is called for a set of vehicle journeys which differs from a set of columns in the aggregated view of the tableau. **(11728)**

VISUM Files:

- ✅ ANM Import: The detector attribute 'Length' is correctly imported now. **(11660)**

- ✅ Open attribute file: In the allocation dialog which appears when reading attributes from file, the attribute name used to be translated into English if the attribute with the given ID was not defined for the target network object but for a different network object. This bug was fixed. **(9757)**

- ✅ Reading attribute file for PuT lines: It is no longer possible to read an attribute file which contains the 'transport system' attribute if the file stores an empty string for the TSys attribute. **(11629)**

- ✅ Restoring windows: Using Visum 12.5, files which were saved with PTV Visum 12 and in which a matrix editor was open without matrix could not be opened. This bug was fixed. **(11702)**

- ✅ Warnings when reading a version: Certain warnings, referring to invalid link orientations, for example, could not be suppressed in previous versions, though the issue of warnings of the same priority was switched off. **(11619)**

⛔ Breaking Changes

Demand operations:

- ⛔ The AddIn 'Nested Demand Model' calculated invalid results (even for passive zones) when the option 'Active zones only' was selected. This fix will cause new results (even for active zones) to differ from previous calculations. **(11725)**

Filters:

- ⛔ Filter logic in hierarchical filters: If a condition is defined on a lower level of the hierarchy, sub-ordinate objects are required on the level of the defined condition which satisfy this condition. Otherwise an object on the higher level cannot be active. In previous versions, even without any sub-ordinate object on the filtered level the object could be active. Furthermore, the hierarchical filter was not always evaluated correctly when the filter conditions of a level were switched on or off. This bug was also fixed. **(10607)**

PrT Assignment:

- ⛔ PrT Assignment: ICA, signalized, HCM 2000: The calculation of the factor G_f for lane groups did not regard the stage's loss time by mistake. It is now considered as the total summed up from the stage's Amber and All-red times if the intergreen determination is not based on the intergreen matrix, but on Amber and All-red. Thus, an assignment with ICA might return deviating results. **(11723)**

⊕ New Features and Changes

Data Model:

⊕ Relations of POIs: New relations have been established from POIs to the allocated POIs of a category. Analogous to the relations of nodes, links, etc., there is a special relation per POI category. **(11241)**

Demand operations:

⊕ A new powerful demand model based on the nested logit approach is offered through the Add-In *Nested Demand Model*. Besides other features, the model allows the flexible definition of model structures and alternatives, either absolute or incremental calculation, time of day choice and production-demand-balancing across multiple demand strata. **(10724)**

Dialogs:

⊕ Fonts: In the 'Font' dialog provided with numerous schematic line diagram graphic parameter dialogs (the separate dialog for edge course labels, for example), two decimal places are displayed, since the data does not refer to [mm], but to raster units [re] in this case. **(11474)**

⊕ Read graphic parameters additionally: Now, the size of the dialog can be edited. Furthermore, the sort order is correct now. **(11510)**

Listings:

⊕ List of (main) OD pairs: Either list now also provides the 'Aggregate' and 'Group' functionalities. **(11505)**

⊕ Sorting: In an ascending sort, empty values are placed on top now. **(11490)**

Matrix Editor:

⊕ List view: Alternatively, matrices can now be displayed in tabular form in the matrix editor. **(9224)**

Network comparisons:

⊕ Version comparison: If some objects are not 'in selection' in the comparison network, an improved warning message will be returned. Additionally, the list of concerned objects is included now. **(11514)**

PrT Assignment:

⊕ ICA, signalized: For RBC controllers, the calculation of the critical path has been improved. Now only the lane groups of those signal groups (stages) are marked as 'critical', which belong to the same ring in a pair of barriers. **(10892)**

Schematic line diagram:

⊕ Connecting edges when running through without stop event: Now, edges can no longer be connected only to those transfer nodes, where the vehicle journey stops for the passengers (= boarding and/or alighting permitted), but edges can now be connected to any transfer node in the line network. Optionally, a filter can additionally be used, thus the connectors use transfer nodes which either represent a stop event or satisfy the user-defined filter criterion, i.e. the specified attribute value. **(11561)**

⊕ Selection of vehicle journeys: The dialog for changes to the vehicle journey selection within a time slot provides a new option, which can reduce the current selection to only those vehicle journeys which satisfy the time condition.Different from the 'Select exclusively' option, this option will not add additional vehicle journeys to the selection. **(11483)**

User interface:

⊕ All toolbars now diplay a "Continuation"-control (small '>>' at the right border), whenever toolbar buttons are hidden due to space limitations. Clicking this control displays a Popup-menu containing the hidden buttons. **(7370)**

✓ Fixed Bugs

AddIn:

✓ Google Maps: Slight deviations occur when converting co-ordinates with the version of the python library 'PyProj' used so far. They have an effect if you want to display the node via the GoogleMaps AddIn. The error does not occur in combination with all projections. The error has been fixed by an exchange of the library version. **(11506)**

ANM:

✅ Signalized nodes: Now, the ANM Export includes the signalization data of a node only if the control type 'signalized' has been selected for this node. **(11434)**

COM Interface:

✅ IGraphic.MaximizeNetWindow: The method MaximizeNetWindow at IGraphic used to place the open windows next to each other in the main window in 12.5 instead of maximizing the network window. This behavior has been corrected as follows: All windows are arranged as tabs (like clicking "Arrange windows as tabs") and the network window will be activated. If the network window is not available, a COM error will be returned. **(11628)**

✅ Map Matching: Map Matching was significantly accelerated for large networks with adjacent coordinate points being located close to each other. **(11279)**

COM:

✅ Changing the focus when running scripts: If you run a script or AddIn in Visum, especially in the context of procedures, the Visum window used to get the focus, if Windows permitted it. This behavior is disadvantageous when working with a different application in parallel and has thus been changed. **(11560)**

✅ Method Show() at listings: Repeatedly calling the method Show() at the same listing object (I...List) opens the listing in the same list window instead of opening a new window each time. **(11484)**

Data Model:

✅ Headway: The program will no longer crash if the headway pattern is to be calculated for a service trip pattern consisting of just one or two vehicle journeys. The crash used to occur in the tabular timetable and also in the schematic line diagram. **(11539)**

✅ Matrix of a demand segment: If a different matrix is alloted to a demand segment Visum now checks for the matching network object type reference. **(11620)**

✅ Renaming attributes: If attributes are changed, the components that use these attributes are now updated, for example filters or lists. Such changes of an attribute could be the modification of the definition of a formula attribute, but also the renaming of a network object which emerges as subattribute in the attribute ID. **(11317)**

✅ User-defined attributes: If a UDA (user-defined attribute) was referenced in a formula attribute, renaming the UDA used to fail and a message saying that no attribute with this new name could be found was returned. This bug was fixed. **(11605)**

Demand Procedures:

✅ "Parameters: EVA trip generation" dialog: In this dialog, the grid sometimes appeared empty by mistake. This bug was fixed. **(11587)**

Dialogs:

✅ Graphic parameters of the schematic line diagram: The size of the grid provided on the 'Transfer nodes' tab in the graphic parameters dialog ('Uniform display' only) will be scaled accordingly now if the size of the dialog is modified. **(11458)**

✅ Grids with numerous entries: In certain dialogs (example: Calculate menu - General procedure settings - Analysis time slots) a program crash could be caused by a huge number of entries (>1800) in previous versions. This bug was fixed. **(11498)**

✅ Inactive cells in graphic parameter dialogs: In the classification grids in various graphic parameter dialogs, the gray gradient will no longer include the inactive cells. Now, two different gray tones are used for inactive cells. Thus, it is easier to distinguish between inactive cells and active cells with a gray-shaded background. **(11550)**

✅ Linear combinations in various dialogs: Marking a row - in the context of numerous procedures - in the "Utility definition" dialog and confirming 'Delete' used to ignore the currently marked row but always removed the last row instead. This bug was fixed. **(11617)**

✅ Procedure parameters dialog Kalibri: The input of values in the grid of the procedure parameters dialog of the procedure 'Estimate gravitation parameters' (Kalibri) was not saved reliably so far. This error has been fixed. **(11501)**

✅ PuT Operating Indicators: Now the color of the 'Infrastructure cost' tab changes as soon as a check box is edited in this tab. If a value is calculated it will immediately turn red. **(11515)**

Filters:

✓ Filter status of dependent filters: The filter status of objects was not updated under certain circumstances in case of dependencies on other filters. This error has been fixed. **(11553)**

Graphics:

✓ Bar scaling: Automatic bar scaling does not take the network maximum into account, but the maximum absolute value of the attribute values is regarded. Example: For values in the range from - 200 to 150, the value 200 is used. Drawing in the network window used to work correctly, only the faulty display in the bar dialog was corrected. **(11391)**

✓ Internet maps: Calling maps in great quantities in one request could lead to a crash during the next request. This error has been fixed. **(11591)**

Junction Editor:

✓ Export ICA report to Excel: This functionality is provided again. **(11657)**

Listings:

✓ Vehicle journey sections: The new settings used to be ignored if the selection was changed to "All". Instead, one of the vehicle journeys had to be selected and then the selection via "All" used to work correctly. This bug was fixed. **(11520)**

Main window:

✓ In various views, the Page-up/Page-down keys zoom analogous to the network editor now, which means an easier handling via keyboard. In previous versions, the view was moved via scroll bars. These are the concerned views: Schematic line diagram, Line block display, Graphical timetable, Signal time-space diagram, and Matrix comparison. **(11631)**

✓ Response to user interaction: Visum could no longer be operated after the following steps: Maximize Visum window (e.g. a list or the procedure sequence) and click "Lock computer", then select "Switch user" and log-on again with your (still active) account. This bug was fixed. **(11549)**

✓ Hot keys: The hot keys 'Ctrl + Tab' and 'Ctrl + Shift + Tab ' can be used again to switch between different views. **(11610)**

Miscellaneous:

✓ Transfers display of regular services: When drawing this plot, the display of passive service groups now differs from the display of active service groups. Furthermore, the display now responds to edited filter settings even if "only active" vehicle journeys are selected. **(11596)**

Network Editor:

✓ Hand mode with Space bar: If the current window section is shifted by pressing the space bar in the line mode or system route / PrT paths modes accordingly, the focus used to switch to the data input row in the associated (line / system route / PrT paths) selection dialog as soon as the space bar was released. This bug was fixed. **(11517)**

✓ Specifying the line route course: In previous versions, even a fixed profile point could be lost when specifying line route shapes. This only occured when a node or stop point was traversed repeatedly. This bug was fixed. **(11383)**

PrT Assignment:

✓ Assignment with ICA: By mistake, the assignment with ICA always applied the method HCM 2000 to nodes with control type 'Yield', even if the option HCM 2010 had been selected in the general procedure settings. This bug was fixed. Thus, another assignment with ICA might produce different results. **(11578)**

✓ Minimum number of LUCE iterations: Due to the 5 preset warm start iterations with reduced demand, the number of iterations had been set to 6 as the minimum for the calculation. This bug was fixed. Furthrmore, the assignment result will no longer be discarded if the calculation is cancelled during the first 5 iterations. **(11647)**

✓ MPA: The Student version of Visum sometimes crashed during an assignment using MPA. This bug was fixed. **(11532)**

PuT Assignment:

✓ Capacity-constrained timetable-based assignment: Under certain circumstances, the iteration used to terminate too early if a second search was run. This bug was fixed. **(11555)**

PuT Line Blocking:

- ✅ Short turning and turning during vehicle journey: If - from a vehicle journey section - both a regular short turning (i.e. to a vehicle journey section of a different vehicle journey with shorter layover times) as well as a short turning to a subsequent vehicle journey section of the same vehicle journey are possible, an unnecessary number of required vehicles used to be calculated. The same applies to the results that used to be calculated if different types of incoming turnings from preceding vehicle journey sections were possible. This bug was fixed. **(11526)**

PuT Operating Indicators:
- ✅ Projection of user-defined attributes: The program will no longer crash if for the projection of user-defined attributes inappropriate attributes are used which cannot easily store values such as the vehicle journey section number, for example. **(11470)**
- ✅ Service kilometers and service time in case of coupling: The indicators service kilometers and service time were not calculated correctly at links if couplings existed. This error has been fixed. **(11556)**

Scenario Management:
- ✅ Indicators: The program will no longer crash when creating scenario indicators, if several indicators exist with an attribute ID that only differs in the numbers (0-9). **(11542)**
- ✅ Project Directories: Project directories were not set correctly when creating a project. The opening of an existing project was not affected. The error has been fixed. **(11530)**
- ✅ SQL Server Compact installation: If the component SQL Server Compact is not installed properly, Visum now issues an improved error message asking the user to re-install Visum or to manually install this component. **(11412)**

Schematic line diagram:
- ✅ "Direction" attribute: When aggregating explicitly by direction, the attribute always returned the 'ahead' direction value by mistake, i.e. from FromPoint to ToPoint for directed edges. This bug was fixed. **(11508)**
- ✅ Circle lines: With circle lines, access to volume attributes could have caused a program crash. This bug was fixed. **(11531)**
- ✅ Closing the View: This process has been accelerated. **(11518)**
- ✅ Coupled vehicle journeys: Any attribute describing the frequency regards coupled vehicle journeys (i.e. the coupled time profiles depart simultaneously) as just one vehicle journey. This also applies to the calculation of headway patterns. **(11497)**
- ✅ Labelling transfer nodes: In previous versions, switching off selected label components for transfer nodes did not always work correctly. This bug was fixed. **(11604)**
- ✅ Setting a window when reading a version from file: Now, the visible window (virtual bounding box) is correctly restored in the schematic line diagram when a version is read from file. In previous versions, the visible window used to be considerably shifted. **(11511)**
- ✅ SVG Export: Even when taking a scaling factor into account, the SVG Export for Illustrator or Inkscape places the labels correctly now. Arrow heads along edges are no longer mirrored. The display of vertical bar labels is no longer displaced to the bottom. Even vertical 'ToNode' labels of edges are displayed correctly. **(11489)**
- ✅ SVG Export: For each class of a classification a group tag used to be opened for the SVG export. By mistake, the group tag IDs used to be identical, thus the level control did not work. This bug was fixed. **(11551)**
- ✅ Time slot-specific selection of vehicle journeys: With time slots stretching over midnight into the new day, some of the vehicle journeys used to be ignored. This bug was fixed. **(11554)**
- ✅ Transfer bars: The transfer bars are placed on the appropriate side now. **(11552)**

Timetable Editor:
- ✅ Context menu: Some commands used to be missing in the context menu of the tabular timetable if the timetable editor did not have the focus. This bug was fixed. **(11533)**
- ✅ Editing in cells: Now, the direct text entry is also possible if the cell is selected by means of the arrow keys or using the "TAB" key. **(11466)**

VISUM Files:

- ✅ Attribute files: Attribute files saved from the list of system route items can now be read from file again. Using the clipboard also works correctly now. **(11601)**

- ✅ Model transfer file: Directed stop points can be converted to undirected stop points now. **(11548)**

- ✅ Network file, user-defined attributes: Reading a file that stores the standard value 'empty' for a user-defined attribute used to set the object values to '0' if this attribute was not listed in the table of the particular object. This bug was fixed. **(11482)**

- ✅ Network files and attribute files: In either file (as well as in lists) the number 2147483647 used to be replaced by MAX by mistake when used as a network object ID. This bug was fixed. **(11540)**

- ✅ Read line routes additionally: If - when reading network data additionally or reading model transfer data from file - stop points were modified in a way that line routes were automatically adjusted, then the values of internal indices used to differ from the actual index values. If subsequently a line route course was read which was in topological accordance with the adjusted course then these original indices used to be kept by mistake. In a time profile items table which was read then, referenced line route items with incorrect internal indices could not be found. This bug was fixed. **(11602)**

⛔ Breaking Changes

PrT Assignment:

- ⛔ Assignment with ICA: By mistake, the assignment with ICA always applied the method HCM 2000 to nodes with control type 'Yield', even if the option HCM 2010 had been selected in the general procedure settings. This bug was fixed. Thus, another assignment with ICA might produce different results. **(11578)**

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➕ New Features and Changes

Add-in:

- ➕ The names of English Add-ins follow now the same notation. **(10776)**

- ➕ Add-ins in general: Invalid parameters return a message now (Cannot find matrix with the specified ID, for example). **(10719)**

- ➕ Additionally, the HTML Help files are available in PDF format now. **(1944)**

- ➕ An new Add-in for PrT assignment reports has been added. The Add-in can be directly linked to a PrT assignment and produces an Excel file and/or a PDF document that contains a summary of assignment results. **(10766)**

- ➕ Isoc2POI: The grid has been redesigned. **(10282)**

- ➕ Isoc2SHP: The calculation runs much faster now. **(10126)**

- ➕ Matrix convolution: A new option is provided, now the Via zone matrix can be either input or output data. **(9002)**

- ➕ New add-in: With the new add-in it is now possible to add the correct paths for the PythonModules folder to the paths stored in the sys.path file. **(10158)**

- ➕ Switching languages: Switching to another language in Visum will no longer cause data loss of saved Add-in parameters. **(10333)**

- ➕ The layout of the 'Split P+R Matrices'-Add-In user interface was improved. **(10015)**

- ➕ The user interface of the Add-In 'Trip Generation Balancing' has been optimized. **(10014)**

- ➕ VisumPy.Matrices: If the destination main zone number is zero for a zone, it will not be aggregated. **(10436)**

COM-API:

- ➕ As a side effect of the changes to logging and tracing (10811), the Visum.Messages container now contains ALL messages of the appropriate priority, not only those surpressed on the user interface. **(7212)**

- ➕ Classified line bars: Now, also the COM interface supports the line bar classification. Furthermore, the classification settings can be adjusted via an 'Edit' button like any other settings. **(10178)**

- ➕ Empty attribute values are now returned as empty Variants. **(10423)**

- GetNearestLink: The COM interface has been extended. Now, a cache can be activated for the execution of the method GetNearestLink. Using this cache will significantly accelerate the method execution if it is called repeatedly. **(2346)**

- GetNearestLink: The method regards the current projection. **(10896)**

- Histogram, reading interval data: Changes to the interval limits affect all matrices now, not just a single one. **(6160)**

- IExecuteScriptPara: An access method from Ioperation to IExecuteScriptPara has been added. In this way, access to the 'FileName' attribute is provided. **(10284)**

- The COM-API now provides a new functionality which facilitates the development of custom importers for proprietary data. To achieve this, Visum features a new configurable MapMatcher-object which allows to map point sequences (representing e.g. PuT trips, GPS positions or edges of an external network) to the network currently loaded in Visum. The IDs and relative positions of the best matching objects of the Visum net can then be retrieved. The MapMatcher is created through *Visum.Net.CreateMapMatcher*. **(10306)**

- The matrix includes an empty formula now if a formula matrix is initialized. **(10656)**

- The Method Visum.CalcPartNet was renamed to Visum.CalcSubNetwork for better matching the user interface. For downward compatibility, the old method is still available as 'deprecated'. **(10279)**

- The name of the print job can be defined through a new optional argument of the method Visum.Graphic.Plot(). **(10657)**

- The parameters of the procedure 'Init assignment' can now be accessed through a new method IOperation.AssignmentInitParameters **(10681)**

- When adding new network objects through COM, it is for most network object types no longer nescessary to provide a valid key value for the new object. Instead, when passing a 0 as the key value to the *Add*-method, Visum generates a valid key value internally. This works for all network object types with keys composed of a single integer. **(5463)**

Data model:

- It is now possible to analyse data across multiple analysis time intervals. New 'virtual' analysis time intervals can be defined and associated with an arbitrary set of regular time intervals and an aggregation function for the underlying data. **(10447)**

- Line routes can now be shifted to lines associated to a different transport system. The line selection in the *Edit line route* dialog is now longer restricted to lines with the same transport system. Links, stops etc. are opened for the new transport system if nescessary. **(8610)**

- Link types can now be defined as 'strict' which will serve to keep the link attributes consistent with the link type defaults. When the link type of a link is changed to a link type having this flag set, the attributes of the link are automatically set to the link type defaults. **(8123)**

- Polygon length of the PrT paths: The object 'PrT path' has a new attribute 'Length polygon' which is based on the correspondent attribute of links and the attribute 'Length direct' of the optionally existing connectors. **(11223)**

- PuT paths can now have user-defined attributes. These attributes can be displayed (not edited!) in lists and for example be used in filters such as the new filter on PuT paths. The values for these attributes can currently not be edited in the Visum user interface, but only be provided through connection files (*.con) generated by external applications. **(6081)**

- The data model for RBC controlers has been fully integrated into the Visum-data model **(10486)**

- The data model for roundabouts was adapted in order to allow passing the data directly to PTV Vissim for visualisation and simulation. The new attributes *Roundabout circulating lane width, Exit radius* and *Roundabout circulating speed* where added to nodes. The attributes *Inscribed Circle Diameter, Entry Radiu, Entry Width, Approach Half Width, Flare Length, Entry Angle, Grade Separation* and *KimberHollis c-factor* were moved from links to node legs. **(10347)**

- A new relation exists between Valid Days and all Vehicle Journey Sections using this Valid Day. **(10071)**

- Additional aggregate functions 'distinct' and 'DistinctActive' are available for 1:N-relations. These provide a listing of the unique attribute values, similar to the 'frequency' aggregate function, but without the actual frequencies. **(594)**

- Detectors can now be located within an intersection through their leg/lane/distance to stopline as an alternative to link/lane/relative position. New attributes allow to associate such detectors with a signal control and maintain additional data such as transport systems or channel number. The data is edited in Visums node editor. Thereby, data required for microsimulation or traffic ITS applications can fully be maintained in the Visum model. **(7734)**

- For PuT path legs, a new relation to the fare zones used and counted on a path leg is available. **(2092)**

- Formula matrices: The calculation of totals and diagonal sums works faster now. **(10521)**

- Initial- and transfer fares are now defined between fare systems instead of between fare systems and ticket types as before. **(4073)**

- It is now possible to toggle profile points within coupled sections when editing time profiles. **(10055)**

- Network statisitcs: The network statistics give access new indicators which are of particular interest for scenario evaluation. The matrix sums for individual matrices are provided as calculated attributes. If demand models are defined and mode choice matrices are calculated, the demand shares for all modes with respect to total demand are also provided as attributes of the network. **(3574)**

- New 1:1-relations betwen network statistics and network provide bidirectional access to the respective attributes. This allows to show user defined network attributes in the network statistics list and to access the network statistics through COM. **(11043)**

- POI category: A POI category is called 'active' only if it contains active POIs. Especially, you can save a network storing just the data of the active POIs and their category definitions by means of a filter for the POIs of certain categories. **(10857)**

- Propagation: The propagated link volumes without regard to count values can now be output. **(10451)**

- Relations to POIs: Parallel to the existing relations to POIs (from links, for example) additionally new relations to the POIs of a category are now provided. **(2339)**

- Stop points: The new attribute 'IsTerminalForVehicleJourneySection' indicates the final stop points in terms of line blocking. **(10289)**

- System routes: Even if either the start stop point or the end stop point is a directed stop point on a link, the opposite direction of a system route can now be created in the same way as the opposite direction of a line route. **(9386)**

- The access for the relation from a network object to a POI has been accelerated. **(10784)**

- The attributes 'Number of lanes' and 'Lane' of detectors have been renamed to 'Number of lanes on link' and 'Lane on link'. **(10914)**

- The attributes 'Use origin/destination connector shares PrT' for zones and 'Has PrT' for connectors have been associated with the module 'User interface PrT' and are now listed in the attribut selection in groups 'Input PrT'/ 'Ouput PrT'. **(1314)**

- The attributes "IsInterlining" for line routes and "Toll-PrTSys" for link types are obsolete and get removed from the data model. **(4534)**

- User defined attributes can now contain empty values. **(10560)**

- Vehicle journey adjustment due to line route lengthening: Optionally, the dimensions of the vehicle journeys can now be retained. In previous versions, a vehicle journey from the line route start and/or to the line route end used to be lengthened accordingly from the new line route start and/or to the new line route end automatically when the line route was lengthened. **(10122)**

- When converting from double numbers to integers, Visum now consistently (e.g. in the COM interface) rounds the values. **(10256)**

Demand operations:

- The operation *Tour-based model - combined distribution/mode choice* now allows to save the distribution utilities (logsums) calculated internally to normal matrices for later use. **(11071)**

- The procedure *Tour-based model - combined trip distribution / mode choice* can now produce demand amtrices for arbitrary combinations of persons groups, modes, origin and destination activities and multiple time intervals in one single run. The output matrices are now defined in the procedure parameters dialog instead of the demand model settings. **(10591)**

- Saving of weight matrices to file from the procedure 'EVA weighting' is now optional an can be controled through a new check box. **(11169)**

➕ The procedure 'Tour-based model - Combined trip distribution / mode choice' has been optimized for multithreaded evaluation, resulting an much shorter run times on multi-core machines. **(10111)**

Dialogs:

➕ 'Create vehicle journey' window: The focus is now in the 'Name' entry field, when the window is opened. It used to be in the 'Number' field. **(10459)**

➕ 'HAFAS import' dialog, 'Transport systems' tab: For sorting, any of the columns provided in the TSys list can be selected now. **(10418)**

➕ Default styles for line and path bars: It is now possible to define a default style for line and path bars and to set whether they should be drawn by default. New line routes, time profiles and such which are not covered by the graphic parameters (e.g. when loaded from file) will use this default setting. **(1317)**

➕ HAFAS import settings, "Files" tab: You can now adjust the column width for the paths. **(10921)**

➕ In some dialogs the display of tabular data was upgraded to modern grid controls. These now provide extened functionalty such as Copy&Paste and simultaneous editing of multiple selected cells.
This relates to the dialogs
- Edit zone/main zone (page Demand)
- Edit connector (page 'Transport Systems')
- Parameters of procedure 'Edit attribute'
- Parameters of procedure 'PuT interlining matrix'
- Parameters of procedure 'Direct assignment'
- Parameters of procedure 'Assignment analysis'
- Parameters of procedure 'Calculate PrT skim matrix'
- Parameters of procedure 'Calculate PuT skim matrix'
- Edit user defined attribute formula **(2035)**

➕ In the dialog 'Edit line route', page 'Items and time profiles', active and passive time profiles are now visually distinguished in the right area by printing the name of passive time profiles on the tab in italics. Also, the tooltips provide information on the filter status of the time profiles. **(3243)**

➕ Inactive cells in parameter grids are now indicated visually. **(11356)**

➕ Line blocking parameters window, Transport systems. The dialog is noticeably faster and the memory usage much lower. **(9579)**

➕ Multi-edit, transport systems, allocate constant value to attribute. Two buttons were added to this window. Use them to open (or close) the concerned network objects for all transport systems simultaneously. **(10179)**

➕ On the dialog *PuT Fares*, the page *Demand segments* now also shows the name of the fare system (e.g. for sorting). The dialog for associating lines with a newly created fare system is now omitted when no lines are defined in the network. **(10683)**

➕ Overview dialog for Aliases: In the Network menu, an Overview dialog is provided now for Alias Management in the network. **(8277)**

➕ Parameter dialogs for demand modeling procedures, EVA weighting: The sub-window 'Define assessment types' now provides the option 'None'. **(10599)**

➕ Procedure parameters windows: The parameter windows for the demand modeling procedures (4 stage model, VisEVA and Tour-based model) were updated. Now, the data of all demand strate is displayed simultaneously. Aggregation in the list makes it possible to compare the settings by demand stratum easily. **(6202)**

➕ The attribute selection tree in the *Multi-edit* dialog can now be toggled between classical, alphabetical and hierarchical view. **(9384)**

➕ The category of new POIs can now also be selected in the category management dialog. **(10750)**

➕ The denotations of buttons in several dialogs and context menus has been standarized on the German GUI. **(10853)**

➕ The dialog for selecting attribute groups when saving a network file now supports multi-select of attribute groups for quicker configuration. **(10399)**

➕ The dialog for setting graphic parameters is now scalable. If the dialog is reduced to a smaller size than required, scrollbars give access to hidden controls. **(4262)**

➕ The layout of the procedure parameter dialogs for skim matrix calculation (both PrT and PuT) has been optimized to give more room to the matrix list. **(3819)**

- ⊕ The parameter dialogs of the timetable-based and headway-based PuT assignments have been modified. Descriptions for the entries under Origin and Destination zones, respectively, and Analyzed OD pairs have been added to clarify the effects in the calculations. **(10720)**

- ⊕ The references to networks in the dialogs for model transfer files and for network merge mode are changed to network 1 and network 2. **(10708)**

- ⊕ The user interface for defining combinations of matrices and vectors (procedure parameters and other places) was upgraded to modern grid controls. These now provide extended functionalty such as Copy&Paste and simultaneous editing of multiple selected cells. **(3232)**

- ⊕ The user interface for defining graphic parameters for line objects (links, connectors,...) has been refurbished. The most important settings can now directly be modified in the overview grid, which also allows simultaneous editing of multiple entries and supports *Copy&Paste.* **(6352)**

- ⊕ The user interface for defining graphic parameters for point and area objects has been refurbished. The most important settings can now directly be modified in the overview grid, which also allows simultaneous editing of multiple entries and supports *Copy&Paste.* **(7753)**

Filters:

- ⊕ It is now possible to specify filter conditions on PuT paths in the OD pair filter dialog. These conditions apply in the PuT path list and when filtering network volumes. **(9973)**

- ⊕ The possible filter conditions for indirect attributes which represent a 1:N-relation have been extended. The extended conditions are true if either all or alternatively at least one of the objects on the other side of the relation fulfill it. Thereby, queries like selecting all zones connected to a specific nodes are easyly created now. The functionality is also available through the COM-API. Please also refer to the example shipped with the installation. **(3242)**

Graphical Operations:

- ⊕ Besides the usual 'AND THEN' concatenation of network objects in flow bundle query terms, it is now possible to query on alternative objects combined by 'OR' to be used by the paths in the flow bundle. Brackets are used to group the alternative objects to be included in a condition. The COM-interface was extend by methods for setting these brackets in a flow bundle condition. **(1831)**

- ⊕ When adding a condition term to a flow bundle query, also transport systems of type PuT-walk or PuT-aux are now considered by default in the supply. **(10901)**

Graphics:

- ⊕ Auto zoom in the page preview: If 'Auto zoom' is called for an object which is located outside of the currently displayed area, the query 'Would you like to close the page preview for map section display?' will appear. **(10473)**

- ⊕ Background imagery from SVG and DXF/DWG is now supported on 64-Bit-Systems to the same degree as on 32-Bit-Systems. **(10988)**

- ⊕ Drawing POI connections: Via a new option, drawing can be reduced. Only the connections of active POIs are drawn in this case. **(10464)**

- ⊕ Internet maps as backgrounds: Internet maps can also be included for geographic projections, now. **(10569)**

- ⊕ Tables in labels can now be positioned more flexible at nine different positions on the object. The positions are combinations of top/center/bottom in vertical direction and left/center/right in horizontal direction. **(2732)**

- ⊕ Visum now features a graphical display of connections at a stop in form of a new clock-like view, including the display of transfer flows similar to node flows in the Node Editor. Please also refer to the overview section and the documentation. **(2249)**

- ⊕ Walktimes and transfers between different stop areas of a stop can now be visualized in theNetwork Editor through bars similar to desire lines. Please also refer to the overview section and the documentation. **(2246)**

IO interfaces:

- ⊕ 'Parameters: railML import': The special option 'no selection' is now provided for attribute selections in this window. **(9893)**

- ⊕ A new importer allows to directly import data from the signal optimization tool *SYNCHRO.* **(10893)**

- A new importer allows to generate networks from parts of the OpenStreetMap database. Visum import the nodes and links including link types and important attributes as well as turn and accessibility restrictions. A flexible configuration system allows to customize the import process. Please also refer to the description in the overview section and the documentation (provided as separate PDF) **(5904)**

- Access database format accdb: In VISUM, also the accdb database format of Access 2007 is supported for data import and export. **(9147)**

- An export procedure for data in railML 2.1 format has been implemented. **(10446)**

- An import procedure for data in railml format (version 2.0 and 2.1) has been implemented. **(9362)**

- Error messages during the import of shapefiles now appear only once. **(11488)**

- HAFAS-Import: Information about "main masts" in the file "Connections between stops" is now evaluated correctly. **(3239)**

- HAFAS import: Destination coaches are now included in the import. **(9338)**

- railML import, modifying valid days: If a new variant is created from an existing valid day, then the name of the new variant will indicate the modification. **(10864)**

- railML import: For length data, the import of data provided in the scheme version railML 2.0 no longer assumes the unit [m], but [km]. For the following reason, the scheme version railML 2.1 is not concerned: In scheme version 2.0, the length data unit is undefined, whereas the standard provider system FBS stores length data in [km]. Since railML 2.1, the unit [m] has been defined for length data, and any data-supplying system has to use this length unit. **(10917)**

- railML import: Time profiles are now numbered without a suffix. A suffix is not required, because there is always just one time profile within a line route. **(10983)**

- SATURN Import: The SATURN importer can read the free SATURN-FORMAT in "Section 5555" and considers the parameter "XYUNIT". **(10313)**

- SATURN, reading PuT line data: Now, the import can also handle data with parameter EZBUS set to TRUE. **(10405)**

- SATURN: Also right-hand traffic networks can now be imported. **(10539)**

- SATURN: Now, U-turns are closed by default. **(10404)**

- SATURN: The split logic for links and connectors has changed. Now splitting a link dows no longer modify the geometries of adjacent SATURN nodes. **(10082)**

- Shape file import: If polygons are normalized this will be logged to the trace file. **(10555)**

- The importer for data from CUBE was refurbished and is now accessible as a regular Add-In in the script menu without requiring separate installation. **(10753)**

- The importer for data from TransCAD was refurbished and is now accessible as a regular Add-In in the script menu without requiring separate installation. **(11192)**

Junction Editor:

- Create signal controller: A new SC used to be switched off by default, even if the 'Switched off' check box was not enabled in the dialog window. Now a new SC is not automatically switched off. **(10516)**

- The 'Switched off' check box in the 'Geometry' tab now appears as 'Unchecked' or 'Checked', as applicable. **(10515)**

Lists:

- Cross-section functions for indirect attributes: The color of the column header and tooltip now indicates, that "cross-section" means the total sum calculated for indirect attributes. **(7199)**

- Deleting a multi-selection: In those lists whose objects can be deleted, now multiple selected objects can be deleted at once via 'Delete' in the context menu. **(10703)**

- Display of Enums with concatenation: If a sign other than the default sign (comma) is selected for the concatenation in the network parameters window, then the concatenated strings of attributes of the discrete value type will be displayed correctly now. **(10609)**

- If attribute IDs are renamed, due to changes to the subattribute code, for example, the list columns of these attributes will no longer be dropped. Now, these list columns are renamed accordingly. **(10094)**

- If in an already sorted list another column is selected for sorting, the order of rows according to the first criterion is stable now, i.e. the given order of rows will be retained if the entries in the column which was selected later show identical values. **(7054)**

- In the list PuT path legs the description of the attributes From stop number and To stop number has changed to clarify the source of the attribute values. The relations StartStop and EndStop have been renamed to SurveyDataStartStop and SurveyDataEndStop. **(11010)**

- Lists in the 'Extended input options' mode: Attributes of the 'demand segment' value type (e.g. for matrices) can now be edited in a combo box. **(8644)**

- Many additional lists can now be synchronized with the network editor. This relates to lists which are only indirectly related to network objects (e.g. Line route items), therefore only synchronization from the list to the network editor is enabled, not from the network editor to the lists.Depending on the list type, the corresponding network objects are either selected or just highlighted. **(6402)**

- Network object lists are no longer automatically updated after changes to the procedure parameter settings. **(10400)**

- Reading data for object types with numerous sub-attributes from attribute files or pasting data from clipboard is much faster now. **(10388)**

- The buttons for sorting a list now also work when only a single cell is selected. They used to be enabled only when a complete column was selected. **(7677)**

- The lists for line route items, time profile items, vehicle journey items and system route items now provide an alternative section-centric view. In this view, the last item/row of each object is omited. **(9358)**

- The special network object filters for the lists 'Line route items', 'Time profile items', 'Vehicle journey items', 'Vehicle journey sections', System route items', 'Line blocks', 'Line block items' and 'Toll matrices' are now saved with the list layout. **(10438)**

- Transport systems. All 'Multi-edit TSys' queries now provide the 'Yes for all' button. **(10247)**

Matrix Editor:

- Create matrices: The 'Create matrix' dialog window has been extended. Now, several matrices with identical properties can be created at the same time. **(5744)**

- Editing matrix values: Now, data matrices can still be edited if formula matrices and data matrices are dealt with simultaneously. **(10552)**

- Matrix tree context menu, common arithmetic operations: In the matrix tree view, the context menu now provides access to various simple computation methods. These functions work simular to the usual function call via 'Open matrix' - 'Select function from the arithmetic operations bar'. **(5137)**

- Scrolling along diagonal in matrix editor: Now the shortcuts Alt-PgDown and Alt-PgUp can be used to scroll into both directions simultaneously (i.e. diagonal scrolling). **(5534)**

- Totals in formula matrices: In the status bar, the sum is no longer displayed for formula matrices since the computation requires too much time. **(10341)**

Miscellaneous:

- A new options allows to control whether U-turns on new links shall by default be opened for the transport systems common for both links or closed for all transport systems. **(11130)**

- Check add-ons: The order of checks for whether an add-on has been purchased or activated was corrected. **(10855)**

- Command line options: There are new command line options for 'load version, execute procedures' and for 'load version, ecetude procedures, save version'. **(9544)**

- Product name: The name of the product has been changed to PTV Visum. **(11017)**

- The Addon-module 'Modal split for standardized assessment' is now longer marketed. The functionality is still available for use with existing licenses. **(11014)**

- The default parameters for digitizing line routes (e.g. search criterion) can now be set in the options on page 'Network->Lines'. **(10401)**

- The logging of procedures and errors has been revised and the related files haven been reorganized and renamed. The former trace file 'Trace.txt' ins now the log file 'log.txt' an mainly contains a log of the procedure execution with start- and end times of the procedures. The former error file 'Error.txt' is now the message file 'message.txt' and contains error messages, warnings and information including all messages posted on the user interface. **(10811)**

- The student version of PTV Visum, which is offered for download for free without registration now exhibits the following regulations:
  -Network size is limited to 30 zones as before.
  -The software is usuable for one year after publication. Please upgrade to the current release afterwards.
  -Data written with the student version of PTV Visum is flagged by a water mark and can ONLY be opened by the student version.
  -The student version has a run time restriction of 45 minutes per session. After this time, Visum will ask to save the current data and then shut down. It can be restarted immediatly. **(9015)**

Network comparisons:

- The attribute set of existing version comparisons can now be altered through the new Button *Edit*. **(9430)**

- Version comparisons can now operate in two different modi. In the existing version comparisons, the attributes to be compared were copied from the comparison version to the working version once. In the new operation mode, the comparison versions stays opened in the background. This allows for example to use indirect attributes based on the object relations in the comparison verion in filter conditions and graphics parameters. **(1830)**

Network editor:

- A new special function *Delete enclaves* is offered for all network object types with area geometry. The function deletes 'holes' in the areas. When the 'holes' are shared between multiple objects (of different types), Visum asks for confirmation. **(634)**

- A new special function allows to generalize very detailed link polygons with many vertices. The generalization saves storage space and accelerates network drawing. The functionality is available through *Generalize link polygons* on page *Polygons* in the *Multi-edit* dialog for links. Visum then tries to eliminate vertices without changing the general shape of the link polygon within a choosable tolerance. **(8411)**

- Multi-delete time profile items: Now, multi-delete can be applied to all (or all active) time profile items. **(10616)**

- The special functions for time profile items and the procedure *Set run and dwell times were extended. It's now easly possible to set times for profile points not used by vehicle journeys or to delete such profile points from the time profiles.* **(9361)**

- 'Edit line route shape' from the timetable editor: The 'Edit shape' button in the 'Edit line route' window is also provided if this dialog window is called from the timetable editor. In this case, the program automatically switches to the network window. This also applies if 'Edit line route shape' is called from the open list. After line route course editing, the program will automatically switch to the 'Edit line route' window again. **(10672)**

- Connecting line routes: For connected line routes with more than one time profile, too many of these used to be deleted. Now, time profiles with identical names are connected to each other and will no longer be deleted. **(3108)**

- Model transfer file display: POIs are displayed in separate tables by category. Hierarchical display shows the matrix entries not only via tooltip, but also in the tree. The whole tree can be copied to the clipboard. **(9897)**

- The operation 'Recalculate the centroids' for zones or other area objects now calculates the true geometrical centroid of the polygon. **(1599)**

- Transfer times between time profiles are now preserved when aggregation line routes. In case of multiple different values, the maximum transfer time is used. **(7214)**

Other Operations:

- For the procedure Edit attribute a new operation sign has been added that allows calculations 'raise to the power of'. **(10786)**

- Network check, option 'Viability for ICA': Warnings which refer to pure PuT lane turns will no longer appear, since these lane turns are not relevant to ICA calculations. **(4540)**

- The algorithm used for determining service trip patterns in the procedure 'Calculate service trip pattern' and within the timetable editor has been revised and unified. It is now capable of detecting irregular trip patterns (such as 6/7/7). The procedure now offers the same options as the timetable editor, allowing to define whether to respect the spatial extent of vehicle journey and to chose between maximising the number of trips or the temporal extent of the service trip patterns. **(11070)**

- The calculation of linear combinations of matrices and vectors has been optimized for multithreaded execution. This will usually speed-up the procedures 'Combination of matrices and vectors', other procedures using the functionality (e.g. demand procedures) and the interactive calculation in the matrix editor on multicore systems. **(10690)**

- The procedure and multi-edit-operation 'Intersect' are now also applicable for string attributes as target and source. Aggregate functions like 'Concatenate' and 'Frequency' can be used in these cases. **(3244)**

- Updating node impedances: Too many 'faulty' nodes used to be recorded, when the Multi-edit special function 'Update impedances at node' was applied to nodes and/or main nodes. This bug was fixed. **(10715)**

Passenger surveys:

- Plausibilization: During plausibilization, specific walk times are now also taken into account when switching from one path leg to the next. So far, they were only effective within the connection search. **(10808)**

Procedure sequence:

- Read xml file: When reading procedures from XML-files, it is now possible to insert the imported procedures at an arbitrary position in the exiting procedure sequence. Analogous to reading from binary *.par files, it is now possible to chose between reading only the procedure sequence, only the general procedure setting or both. **(3227)**

- The procedure sequence has two new columns Evaluation and Evaluation configuration. They allow to link reporting Add-ins to specific procedures. The Add-in are executed directly after the procedure. **(10977)**

PrT assignment:

- In the ICA-calculation for two-way stops right-turns of the major flow (left-turns in left-hand traffic) are no longer blocked by pedestrians. The assumed priority rule has been reversed. This leads to changes in the results when calculating wait times at turns and node legs of the major flow. It can also lead to changes in the results when calculating assignments with ICA. **(11273)**

- The LUCE assignment procedure was optimized. The new revision brings better performance and improved convergence even with steep VD functions. Furthermore, the procedure has been modified to make use of multithreading. In order to guarantee stable results across systems with different numbers of cores, the number of cores to be used by a LUCE procedure can be set independent from the global settings in Visum. **(10238)**

- Due to the accelerated impedance calculation, the equilibrium assignment is faster now. **(9466)**

- Equilibrium assignment: Now, even 0 outer iterations are permitted. Thus, only the route volumes have to be adjusted to the new matrix when starting from an initial solution. When not starting from an initial solution, the procedure works like an incremental assignment. **(10293)**

- ICA, two-way stops: If the turn types in the major flow are inconsistent, an error message will appear (instead of a warning in previous versions), and the calculation will not be executed. **(10426)**

- Impedance calculation at node (ICA): For the 'all-way' control type, the computation could be sped up. This also affects the assignment with ICA. **(9645)**

- LUCE procedure: If for a mesh a user-defined VDF is used which does not calculate in [PCU], no longer TSys-comprehensive balancing will be performed to reach the proportionality. **(9830)**

- PrT functions: The option for reproduction of results until VISUM version 11.02 with acceptance of an instable shortest path search is no longer available. Now, always the new and stable shortest path search is used. **(10296)**

- UserVDF: The calculation of user-defined VD functions has been accelerated. **(10469)**

PuT assignment:

- Capacity-restraint timetable-based assignment: Connections found by the connection search during the first iteration will not be discarded by the connection search during the second iteration. **(11281)**

- Fares can now optionally be stored and loaded to/from connection files (*.con) per demand segment. **(10448)**

- In the headway-based assignment it is optional possible to use fares based on the fare model as a component of the impedance. **(10228)**

- A new variant of the timetable-based PuT assignment is available which allows to reflect the effects of crowding and capacity constraints on connection choice. Please also refer to the description in the highlights section, the Visum documentation and the example for capacity contraint assignment shipped with the installation. **(3500)**

- Fare calculation: The calculation was speeded-up in networks with numerous fare systems. **(1590)**

- Skim 'Fare': For the 'Fare' skim, the PuT skim matrix calculation runs much faster now. **(10812)**

- Skim calculation: For the calculation of skim data, a time series is required with weights which sum up to a value > 0 within the assignment time interval. If this condition is not satisfied, a warning will be returned now. **(10996)**

- The parameter 'B' in the definition of the skim 'Discomfort' has a new default value in newly generated models, which allows to interpret it as a percentage. **(7154)**

PuT Line Blocking:

- It is now possible to automatically generate system routes where required for routing of empty trips. The system routes are generated from a shortest path search. The functionality is also available through the context menu 'Create for pairs of stop points' of system routes. The existing menu item 'Create' is renamed to 'Create from Time profiles' **(4612)**

- Layover time within a vehicle journey: Optionally (via a line block version attribute), taking the minimum layover time (pre and post processing times) into account can be disabled for the transitions between the vehicle journey sections of the same vehicle journey. **(10509)**

- When using volumes in line blocking with vehicle exchange, it's now possible to control per verhicle journey item whether total capacity or seat capacity shall be used or to exclude the item from the evaluation. This is achieved by providing special toggle values (positive -> use total capacity, negative -> use seat capacity, 0 -> exclude) in an attribute of vehicle journey items and choose this switchover attribute instead of the also available global options toalways use total/seat capacity. **(10796)**

PuT operating indicators:

- The behaviour of the procedures *PuT operating indicators* and *Territory indicators* in case of deletion or geometry changes of territories has been overhauled and warning messages were added. **(11231)**

- Include territory-based indicator calculation: Optionally, the procedure can now return PuT-related indicators which had to be calculated by the territory-based indicator calculation procedure in previous versions. **(10328)**

Scenario Management:

- Closing the 'Procedure sequence' view: The window is closed before the scenario calculation is saved. Thus, the network window will appear immediately when the result version is loaded. **(10371)**

- Floating window: If the user switches to a different language while the window is open, the dialog entries are adjusted immediately. **(10897)**

- In addition to procedure sequences from *.par or *.xml-files, it is now possible to use Python or VBS scripts as procedure parameter sets for the calculation of scenarios. When editing such parameter sets, the script files are opened in an editor which can be configured per script file type in the Visum options. **(11066)**

- Project directories can now be set to arbitrary folders relative to 'SharedData' or the scenario folder. This allows a cleaner organisation of aditional project files. **(10189)**

- Skim aliases: When aliases are defined for skims, the attribute name entry field is now automatically preset. **(10377)**

Schematic line diagram:

- Branching events: Optionally, the 'Branching' icon can only be displayed for branchings which are either the start or the end of a coupled section of at least one underlying vehicle journey. **(11283)**

- The Timetable-Network-Graph has been completely revised and is now called 'Schematic Line Diagram'. Please refer to the description in the overview section, the Visum documentation and the example shipped with the installation. **(4532)**

Signal time-space diagram:

- The same background colour as in the screen view is now used in the SVG export and in screenshots. **(9575)**

TFlowFuzzy:

- The procedure now optionally generates additional diagnostic outputs, which are helpful for debugging problems when the procedure terminates without finding a solution. The Visum-Log-file contains several new indicators about conflicts between count values and an indicator on the influence of the individual counts on the solution. Furthermore, it is possible to generate a separate statistics file documenting the trend of assignment and demand matrix values over the iterations. **(6353)**

- The set of potential input counts has been extend by an option for total traffic. If this value is provided, the sum of the demand matrix sums of the considered demand segments with respect to their shares is adapted to this value. In particular, this allows to fix matrix sums to the current value during matrix correction. **(10769)**

- When using skim distributions as constraints, the calculation can now optionally be limited to the active zone relations. **(10073)**

Timetable editor:

- A new context menu item allows to directly open the dialog for editing line route and time profile of a selected vehicle journey. **(9738)**

- Changes to the graphics parameters of the timetable editor (and the signal time-space diagram) can now be reverted using the UNDO function. **(9682)**

- In the graphical timetable editor it is now possible to hide stops which are not served by any vehicle journey **(10603)**

- It is now possible to copy a marked Vehicle journey. The duplicated vehcle journey is inserted after the marked one. The function is accessible through the context menu if regular service mode is off. **(5533)**

- The tabular and graphical timetable now offer a search function (press STRG+F3) for vehicle journeys coupled with the current vehicle journey. The coupled vehicle journey are marked, vehicle journey not dieplayed in the timetable editor can optionally be added. **(3246)**

- The target item of line block items with forced chainings can now quickly be added to the line block view through a context menu item. In detailed line blocking, line blocks can now be fixed by a context menu item in the line block view. The fixation is achieved through adding forced chainings from all line block items of the line blocks to their successors. Thereby, the line block will not be altered in successive line blockings. **(9048)**

- 'Find vehicle journey' returns a message: The user now can disable the current filter settings if the vehicle journey in question is not visible in the timetable editor due to the current filter settings. **(10608)**

- A new context menu item in the line selection of the timetable editor allows to show time profile coupled with of the selected timeprofile, if such exists. **(3236)**

- Double-clicking a vehicle journey in the tabluar timetable now opens the dialog 'Edit vehicle journey'. **(3248)**

- It is now possible to create vehicle journeys via the line selection tree. On the level of time profiles one can access the dialog "Create vehicle journey(s)" from the context menu. **(11020)**

- ITimetableEditor: Via the COM interface, the new option 'Hide stops without stop event' in the timetable editor's sequence of stops is now available as method HideUnservedStops. **(10424)**

- Line block display - system route in the tooltip: For items of empty vehicle journeys, also data describing the used system route will be displayed, if applicable. **(10624)**

- Non-served stops: Now, served stops are only those where passengers may board or alight. **(10640)**

- One or more selected vehicle journeys can now be deleted by pressing the DEL-key. **(3247)**

- Opening the timetable editor after multi-selection of line routes: Similar to the single-selection behavior, the marked line routes are checked in the tree view. The tree also includes those line routes (unchecked) which have not been marked though they belong to the same line as any marked one. **(9853)**

- Sequence of stops: With a new option in the timetable editor, stops which are not served (i.e. non-profile points of the selected time profiles) can be excluded from the sequence of stops view. **(9345)**

- ⊕ Shifting a vehicle journey to another PuT line: Now, the option 'Show only active lines' is provided. **(10551)**

- ⊕ Subtrees of the line selection tree can now be expanded and reduced using the context menu. **(1233)**

- ⊕ The settings of the timetable editor are now saved to the version file. An open timetable editor is fully restored when reading the version file. **(3581)**

- ⊕ The time profile corresponding to the selected vehicle journey is now highlighted in the selection tree view. **(10207)**

- ⊕ The Timetable Editor can now be reached from the Line/Line route dialog even when it is already opened. The line selection in the Timetable Editor can thereby optinally be replaced or extended. **(1239)**

- ⊕ Whe changing the line route or time profile of a vehicle journey, the original start and end stop points of the vehicle journey are now preserved instead of using start and end stop points of the item. If the start or end stop points are not aprt of the new line route/time profile, the old behaviour is applied. **(3245)**

User interface:

- ⊕ It is now possible to define an aggregation function (sum, average, concatenation,...) for each attribute displayed in the Quick View window. This aggregation function is used to combine the values when multiple objects are selected. **(1259)**

- ⊕ Menus: The functions 'Print', 'SVG export' and 'Screenshot' for views (timetable editor, signal time-space diagram, schematic line diagram, transfers display of regular services) are now provided in the view-specific menu (rightmost) and, if possible, on a view-specific toolbar. For the network editor, these functions are provided in the 'File' menu, as there is no view-specific menu. **(11257)**

- ⊕ The menus now contain icons for those entries which are also available as toolbar buttons. **(5838)**

- ⊕ The toolbar *Analysis time intervals* can now be hidden, even if analysis time intervals are defined. The menu *View-->Toolbars-->Analysis time intevals* allows to toggle between three states *Visible*,*Invisible* and *Automatic*, where *Automatic* matches the mode from previous versions. **(6159)**

- ⊕ The window management in PTV Visum was modernized. All windows like lists, node editor, matrix browser or quickview are initially displayed as tabs in certain areas of the main window. from there, they can be dragged out and be docked at other areas of the main window in arbitrary groups. Its also possible to drag these (groups of) windows outside of Visums main window and place them on secondary displays. For fast access to the most important functions, these have been moved to toolbars on the different windows. The main toolbar now only contains global functions. **(7800)**

Visum files:

- ⊕ If a value equals the Minimum or maximum value of a specific data type, it is now written to the *.net-file as the literal 'MIN' or 'MAX', respectively. **(10730)**

- ⊕ The additional attributes *Code, Executed, Success, StartTime, EndTime, Duration* of the procedures and the messages raised during and at the end of the execution are now saved to the version file. Thereby, the are accessible for analysis after batch runs etc. **(10691)**

- ⊕ The ANM-export now also writes roundabout data. **(10382)**

- ⊕ .rbc files are read into Visum when importing data. The RBC data are now integrated in Visum, i.e. external files are not anymore required. **(10925)**

- ⊕ All matrices of a model can now be saved to an external binary file (extension *.vmx) besides the version file. This speeds-up saving of large models containing many matrices, because only the modified matrices need to be stored when writing a version file. The external storage is controled through an option in the File properties and is only available when the matrix cache is active. **(7321)**

- ⊕ It is now possible to import networks exported from PTV Vissim into PTV Visum through a new importer for the ANM file format generated by PTV Vissim. The importer reads basic network and signalzation data, Public Transport data and routes are currently not imported. **(4845)**

- ⊕ The ANM export now creates .rbc files because the data of RBC controllers have been integrated in Visum. **(10979)**

- ⊕ ANM: The length of detectors is now written to ANM-files. **(11426)**

- ⊕ The layout files for the quick view window (*.qla) can now be loaded/saved with custom file names through items in the file menu or buttons in the quick view window. **(7149)**

- ⊕ Database export Access: Now the export also works with the 64 bit version of Access. **(10743)**

- Read network data additionally: Reading old network or demand data no longer creates a fare system and allocates it to the PuT lines automatically. **(4624)**

- Reading network / model transfer file: Warnings used to be recorded in the error.txt file and did not appear on the screen. Now, these warnings are stored in the trace.txt file. Thus, no irritating error messages will be displayed in the scenario management. **(10368)**

- The parameters for the procedures 'Stochastic assignment' and 'Dynamic stochastic assignment' can now be loaded/saved to/from XML-files. A new COM-interface is provided for manipulating these parameters. **(3862)**

⚠ Breaking Changes

Calculation results:

- The algorithm used for determining service trip patterns has been revised. It is now capable of detecting irregular trip patterns (such as 6/7/7) offers aditional options. Therefore, the calculation results may differ from previous versions. **(11070)**

- The calculation of linear combinations of matrices and vectors has been optimized for multithreading. This can cause small deviations in calculation results from previous versions in the operations 'Combination of matrices and vectors', other procedures using the functionality (e.g. demand procedures) and the interactive calculation in the matrix editor. **(10690)**

- The procedure 'Tour-based model - Combined trip distribution / mode choice' has been optimized for multithreaded evaluation. This may eventually lead to small deviations from previous results. **(10111)**

COM-API:

- As a side effect of the changes to logging and tracing (10811), the Visum.Messages container now contains ALL messages of the appropriate priority, not only those surpressed on the user interface. **(7212)**

- As an implication the new window management system, the method *IGraphic::ArrangeWindows* has become obsolete has been removed. **(6030)**

- Empty attribute values are now correctly returned as empty Variants. **(10423)**

- In conjunction with the extensions of version comparisons, the method Visum.CreateVersionComparison was renamed to Visum.CreateVersionComparisonBasedOnAttributes. **(1830)**

- Methods creating a new network: Calling methods which create a new network and thus will initialize the procedure sequence is no longer permitted in the context of a procedure sequence. These are the concerned methods:
  IVisum.LoadVersion
  IVisum.LaodNet (only, if not additively)
  IVisum.LoadAccessDatabase (only, if not additively)
  IVisum.LoadFromMsSQLServerDatabase (only, if not additively)
  IVisum.ImportShapefile (only, if not additively)
  IVisum.ImportEmmeProject
  IVisum.ImportHafasProject
  IVisum.ImportPuTProject (HAFAS projects only)
  IVisum.ClearNet **(11249)**

- The interface for the balancing parameters of the different PrT assignment procedures 'INetBalancingPara' has changed. So far, individual rows of the balancing parameters could be retreived and manipulated through 'NetBalancingItemParameters()'. Rows could be added/removed through 'AddNetBalancingItem' and 'RemoveNetBalancingItems'. The new interface is designed to retreive and set all balancing parameters at once. The new methods 'GetItems' and 'SetItems' use two variant arrays to return or set the parameters for the numbers of outer and inner balancing iterations. **(3862)**

- The Method Visum.CalcPartNet was renamed to Visum.CalcSubNetwork for better matching the user interface. For downward compatibility, the old method is still available as 'depreciated'. **(10279)**

- The table NetParameters has been renamed to Net. The COM-Object Visum.Net.Netparameters has been removed and the functionality relocated to Visum.Net. Therefore, instead of Visum.Net.Netparameters.AttValue, Visum.Net.AttValue must be used to access the net parameters. **(10258)**

Data model:

⚠ The attributes *Inscribed Circle Diameter, Entry Radiu, Entry Width, Approach Half Width, Flare Length, Entry Angle, Grade Separation* and *KimberHollis c-factor* were moved from links to node legs. **(10347)**

⚠ Attribute Transfer wait time: The calculation of the attribute 'Transfer wait time' at stops and stop points is changed in such a way that it includes not only the wait time of direct transfers but also the wait time of indirect transfers with precedent walk links. **(11323)**

⚠ Initial- and transfer fares are now defined between fare systems instead of between fare systems and ticket types as before. The attribute "InitialFare" is moved from ticket type to fare system. The attribute "TransferFare" of ticket type is replaced by a new network object "TransferFare" with the attributes "FromFareSystemNo", "ToFareSystemNo" and u'„';Fare". Whe reading old data, these are adapted to the new scheme. Potential conflicts due to fare systems with multiple ticket types havinf different initial or transfer fares are handled by only preserving the fare last read. **(4073)**

⚠ The attributes 'Number of lanes' and 'Lane' of detectors have been renamed to 'Number of lanes on link' and 'Lane on link'. **(10914)**

⚠ The attributes "IsInterlining" for line routes and "Toll-PrTSys" for link types are obsolete and get removed from the data model. **(4534)**

⚠ The signal control data is now also preserved when the control type of the node is set to a different value then 'signalized' **(10909)**

⚠ User defined attributes can now contain empty values. So far, such values were replaced by 0 when written to user defined attributes by operations lilke multi-edit. **(10560)**

⚠ When converting from double numbers to integers, Visum now consistently rounds the values instead of truncating as was done in some places before. This can result in return values diverging from previous versions, e.g. in the COM interface. **(10256)**

Demand Operations:

⚠ The procedure 'EVA weighting' no longer saves weight matrices to file by default. Saving of these matrices is now optional and the corresponding option is set to 'NO' by default. Therefore, no matrices are written if the procedure is inserted into a procedure flow. When reading existing procedure flows from former versions, the option is activated, so that matrices are written as before. **(11169)**

Graphical Operations:

⚠ When adding a condition term to a flow bundle query, also transport systems of type PuT-walk or PuT-aux are now considered by default in the supply. These were deselected before. This change affects the interactive editing of conditions in the dialog as well as the diverse 'CreateConditionXXX' COM methods of the FlowBundle object. **(10901)**

Miscellaneous:

⚠ Miscellaneous: U-turns for new links (also links created through COM or by reading network files) are no longer generally opened for the transport systems common to both links but may be closed for all transport systems instead. The behaviour is controoled by a new program option. Thereby, depending on the machine settings scripts and network reading may lead to deviating results. **(11130)**

⚠ Product name: The names of the Visum object libraries now have the prefix "PTV", reading "PTV Visum Object Library 12.5 64bit" for example. You will see those names in the reference list of a VBA project. **(11017)**

⚠ The Addon-module 'Modal split for standardized assessment' is now longer marketed. The functionality is still available for use with existing licenses. **(11014)**

⚠ The logging of procedures and errors has been revised and the related files haven been reorganized and renamed. The former trace file 'Trace.txt' ins now the log file 'log.txt' an mainly contains a log of the procedure execution with start- and end times of the procedures. The former error file 'Error.txt' is now the message file 'message.txt' and besides the error messages now also contains warnings and information including all messages posted on the user interface and the user reaction.The message kind is indicated in the file in order to allow filtering.Handling of file names, file locations, project directories and command line options have been adapted, but the old options are preserved for backward compatibility. The COM-Interfaces has also been adapted to the new naming of the protocol files, but the old methods are also preserved and forwarded to the new functions. Empty file names are no longer accepted by the new methods and raise an error. **(10811)**

PrT assignment:

- ⚠ ICA, two-way stop: Right-turns of the major flow (left-turns in left-hand traffic) are no longer blocked by pedestrians. The assumed priority rule has therefore been reversed. This leads to changes in the results when calculating wait times at turns and node legs of the major flow. It can also lead to changes in the results when calculating assignments with ICA. **(11273)**

- ⚠ The PrT assignment LUCE was optimized and now makes use of multithreading. Assignment results can therefore differ from previous versions. **(10238)**

PuT assignment:

- ⚠ Using stored connections for path calculation. If the assignment is based on stored connections for demand segment X instead of a new connection search, then connections with volume = 0 for DSeg X will be ignored. (Those connections can only exist if DSeg X was assigned together with other DSegs in the first place.) **(11134)**

- ⚠ The parameter 'B' in the definition of the skim 'Discomfort' has a new default value in newly generated models, which allows to interpret it as a percentage. Therefore, the value should eventually be adjusted in new models in order to match established experience. **(7154)**

PuT Line Blocking:

- ⚠ When using volumes in line blocking with vehicle exchange, the optional vehicle journey item filter gets replaced by an extended mechanism allowing to specify per vehicle journey item whether to use total capacity, seat capacity or to exclude the item from evaluation. When reading existing parameters, the settings are converted correspondingly, but the previously possible combination of using seat capacity and the filter attribute is no longer viable. In this case, only the filter attribute is read. Therefore, in contrast to the old settings the procedure will not always consider seat capacity, but switch depending on the former filter value. **(10796)**

TFlowFuzzy:

- ⚠ TFlowFuzzy: The parameter 'max. correction factor' was incorrectly applied in exponential for, whereby it was alomost never exceeded. The correction will likely result in more frequent cancelations due to this criteria. Also, existing procedures from previous versions which used to pass will eventually now fail due to this correction. Instead of an error, this is now treated as a warning. **(10662)**

User interface:

- ⚠ The behaviour for zooming using the mouse wheel in network editor, graphical time table, line blocking view, matrix comparison, schematic line diagram and smart map was changed. By default, zooming now centers on the mouse pointer position. When pressing STRG simultaneously, zooming centers on the screen center. **(11163)**

Visum files:

- ⚠ If a value equals the Minimum or maximum value of a specific data type, it is now written to the *.net-file as the literal 'MIN' or 'MAX', respectively. **(10730)**