VISUM Release Notes

Version 9.3

Version 9.30-07

Last modified: 2005-07-27

9.30-07	Corrections, Bug fixes and Extended Functionality (ID)	July 27, 2005

Discarded Program Crashes

- *Open network:* The program will not crash if table *$TimeProfile* contains the *RefItemIndex* or *FixRefDep* column without values. (**3766**)

- *Listings - Context-sensitive menu:* Now, the new entry "Edit network object" cannot be clicked as long as the the pointer is outside of the list area on screen. In previous versions, VISUM used to crash when "Edit network object" was activated though no line had been selected. (**3770**)

- *Legend Wizard, tag 1*: The program will no longer crash if a navigation button is clicked, though no line has been selected (**3787**)

Procedures

- Now, the *Procedure parameters dialog* can be closed via *OK* even if all of the entries were deleted. (**3777**)

- *Procedure parameters(XML)*
  - *Open XML file:* The number of decimal places set via *PuT functions - Volumes* is now read correctly from XML file. (**3773**)
  - *Read XML file additionally:* Even if the XML file contains more operations than currently set in the active network, these operations can be read when option *Read additionally* is active. In previous versions, the number of operations set in the current network version could not be exceeded. (**3780**)
  - *Line costing*: Via XML, also the line costing parameters set via *PuT functions - Line costing* are available now. (**3775**)

Other Procedures

- *Connection import*: The dialog can be closed with or without saving parameter settings even if the specified import file does not yet exist. Thus, settings can be specified completely before creating the connection data file. (**3776**)

Network Editor

- *Merge nodes*: Now, only one node can be selected as data source; in previous versions, both nodes could be selected simultaneously by mistake. (**3783**)

- *Line route - Create opposite direction:* This functionality did not work correctly in the following special case: Line route course contains the same node twice as direct neighbours, once it is a route point and once it is not. This bug could be fixed. (**3779**)

Network Graphics

- Bars being too thin for being drawn clearly will no longer be displayed. (**3759**)

Timetable Network Graph

- Correct labelling of traversed stop points (opposite direction of line route) now. (**3774**)

COM Interface

- The timeout for running VBS scripts from VISUM has been extended to 30 minutes. (**3728**)

Import Interfaces

- *EMME/2*: Line routes can be imported again. (**3768**)

Export Interfaces

- *VISSIM*: At 2-leg nodes that have not been modelled with the help of the Node Editor, VISSIM connectors are created inside instead of outside now. (**3782**)

Add-ons

- *Multi User session*: Even if one of the two link nodes is located outside of the current network display window, the link is drawn again. (**3765**)

Miscellaneous

- *Open network including line route search:* Reading data failed in case of missing specific line route search parameters. This bug could be fixed. (**3769**)

- *Legend*: Print output of the current network window with the legend being selected will no longer show a black background. (**3786**)

9.30-06	Corrections, Bug fixes and Extended Functionality (ID)	July 20, 2005

Discarded Program Crashes

- Terminate VISUM session: The program will no longer crash in case of the EWS window being still open when VISUM is closed. (**3310**)
- *Separating coupled time profiles* will no longer cause a program crash after removing halts from another time profile of the same line route. (**3727**)

Procedures

- *PrT assignment - Blocking back*: The number of initial iterations to be performed jointly in Phase 1 is estimated more cautiously now. The number of decimal places selected for volumes/demand takes effect on the quality of the results. Selection of two or three decimal places is recommended. (**3755**)

Network Editor

- Menu DEMAND - DEMAND DATA - *Standard time series* tag: Even if the Start time at the first item of the time series differs from 0, the correct length (duration) of the time series will be displayed in the grid. (**3471**)
- *Edit line route shape*: The program will not freeze if the route is extended to a stop point not being permitted for the TSys of the line. (**3731**)
- *Copying line route with vehicle journeys* works correctly now, even if the line route is allocated to a line being run by a different TSys. (**3733**)
- The *Edit Line route* dialog
  - will no longer reset user-defined column widths to default, if a "reference journey" is selected via the new control in the *Profiles* tag. (**3730**)
  - may no longer be called by double-clicking a line route in the *Selection* dialog as long as the Timetable Editor is open. (**3720**)

Network Graphics

- *Turn volume labels:* The *Text sizing factor* specified via menu GRAPHIC - PARAMETERS - *Basis* tag is now also regarded for display of turn volume labels on screen. (**3722**)
- Menu GRAPHIC - PARAMETERS - *2D-Display* tag - *Attributes*: The selected attribute remains active if another network object is selected that has this attribute, too. Otherwise, the first attribute of the new network object will be displayed instead. (**3723**)

Timetable-Network Graph

- *Calculation of the position of Transfer nodes:* Optimization does not lead into an endless loop (**3756**)

Miscellaneous

- *Hotkeys*: Hotkeys can now be used again in any VISUM window (Lists, Timetable Editor, Muuli etc.). Previously, they used to work only in the Network window by mistake. (**3629**)
- *Read network file additionally:*
  - No more list updates during network reading, thus the procedure runs faster now. (**3696**)
  - Reading line route data from file additionally will no longer create turn backs at stop points on links. Those line routes did not match the VISUM PuT network model and caused program crashes. Interactively, those data could not be specified. (**3729**)

9.30-05	Corrections, Bug fixes and Extended Functionality (ID)	July 18, 2005

Discarded Program Crashes

- *Background - Legend:* The program will no longer crash, if - via menu GRAPHIC - PARAMETERS - option *Classified display* is active for a network object with only one class. (**3678**)
- *Indirect attributes with sub-attribute:* Selection of an attribute with sub-attribute will no longer cause a program crash (or missing list entries). (**3718**)
- *Timetable Editor:* Subsequent editing of a service trip´s line or direction will no longer cause a program crash. (**3688**)

Procedures

- *PuT Assignment - Headway-based*: Tho following attributes are now regarded additionally:
  - disutility factor: Stop area attribute = factor for origin and transfer waiting times (**2957**)
  - boarding penalty: Time profile attribute = additional boarding penalty (**2958**)
  - mean delay: Time profile items attribute = additional penalty for origin and transfer waiting times (**2959**)
- *Init Assignment* with active OD Pair Filter: after "Init Assignment", recalculation of filtered volumes is no longer performed separately for each demand segment, but jointly in a single step. (**3615**)
- Menu CALCULATE - PROCEDURES - PARAMETERS - *Operations* tag: The "file name" entry will no longer get lost, if it still has the focus, when OK is confirmed (**3680**)

Other procedures

- *PuT Isochrones:*
  - Calculation can be cancelled interactively now. (**2672**)
  - In recent versions, the attribute value calculated for *IsochronesNumTransfers* was wrong (1 transfer was misssing), if a stop area had been selected for calculation of isochrones. Values calculated for isochrones from zones or stops used to be correct. (**3700**)
- *Flow bundle*: Now, any specified term can be removed later via the *Delete* button provided in the dialog. Furthermore, selected passenger types are listed with the selected stop point etc.: B=Boarding, A=Alighting, T=Transfers, W=ThroughWithStop, N=ThroughWithNoStop. (**3020**)
- *Edit attribute:* As decimal point, either a full stop or a comma can be entered for coefficients in the grid. (**3667**)
- *Connection import*: Now, a clear warning is displayed, if - in contrast to network settings - volumes have to be stored with the demand segment, they have been calculated for. (**3681**)

Network Editor

- SINGLESELECT - EDIT - SYSTEM ROUTE: Now, edited data are stored correctly when the dialog box is closed. (**3662**)
- Indirect attributes of vehicle journey items are now evaluated correctly, if any type of …ACTIVE has been selected for aggregation. (**3665**)
- SINGLESELECT - EDIT - LINE ROUTE - *Profiles* tag: In the grid, run and dwell times can now be edited in SingleSelect mode. (**2580**)
- SINGLESELECT - NODE - SHIFT TEXT: With the shifted node, also stop and stop area assigned to this node can be shifted automatically. (**1674**)
- SINGLESELECT - NODE - EDIT - *Link orientations* tag: By default, link orientation values are assigned automatically to the links from/to a node. These entries may be edited now by the user, as long as the clock-wise order of links is not violated. (**2377**)
- MULTISELECT - EDIT - *Formula* button: The additive parameter at the end of the formula now regards current *Units* settings (imperial/metric). (**3671**)

Network Graphics

- Menu FILE - *Preview*: The *Text sizing factor (Screen)* is no longer regarded for network display in the *Preview* mode. (**3682**)
- SINGLESELECT - LINK - LABEL ON/OFF <F4>: Screen display is refreshed immediately, clicking the *Refresh* button is no longer required. (**3631**)
- The label at the middle of the link may now also be activated for marked links. (**3672**)

Timetable Editor

- *Tabular display - Hierarchical:* In previous versions, only a single vehicle journey was regarded per line route, when the most frequently used stop point was calculated. This caused an incorrect stop point sequence. This bug could be fixed. (**3690**)

Matrix Editor

- *Territory-related projection:* Option *by element* (interactive) will no longer cause incorrect results if the matrix zones are not sorted in ascending order. (**3031**)

COM Interface

- *Procedure parameters*: Parameters for both, *Calculation* and *Init* of PuT indicators are now provided via COM and stored with the XML file. (**2599**)

Import Interfaces

- *Database*: Warnings output during *reading* now refer to the object concerned. (**3685**)

Add-ons

- *Background add-on:*
  - CREATE - BACKGROUND *(new)*: The *Open (new) background file* dialog directly calls the folder specified for so-called old background files (*.HGR) via menu FILE - PROJECT DIRECTORIES. (**3569**)
  - CLIPS: The network-independant graphic object *Clips* is temporarily not available. Thus, clips saved with version files will no longer be displayed, even though they are still listed in the Graphics parameter dialog (*Basis+Layer* tag). (**3676**)
- Menu EXTRAS - *Timetable-Network Graph*: Output to printer provided. (**3446**)

Miscellaneous

- *Read network file additionally:* The procedure has been accelerated . (**3664**)
- *Read selected graphics parameters:* Parameters for 2D Display are no longer initialized. (**3684**)
- *Graphics parameters - Classification*: If an attribute of data type *Real* has been selected for classification, the class limits may now also be specified as real numbers. In previous versions, the default number of decimal places of the attribute had to be greater zero in this case. (**3686**)
- *Open VER file or GPA file:* Colors preset for *Shortes path search: Network objects* are now also read from file. (**3473**)

9.30-04	Corrections, Bug fixes and Extended Functionality (ID)	July 11, 2005

Discarded Program Crashes

- SINGLESELECT - EDIT - LINE ROUTE - *User Profile* tag: Editing UDAs will no longer cause a program crash (**3644**)

Other procedures

- *Open procedure parameters:* Now, consistency of analysis period and calendar period is checked, when data are read from PAR file. A warning will be displayed in case of required changes. (**3660**)
- *Edit attribute*: Now, a vertical scroll bar will appear in the procedure´s parameter dialog, if column width is extended thus exceeding the visible section. (**3652**)
- *Time-of-the-Day Choice:* In case of missing input data for a certain time interval the returned warning will no longer point to a different time interval by mistake. (**3657**)
- Menu FILE - *Open difference network*: *Refresh* is now executed automatically after difference network calculation. (**3625**)

Network Editor

- Menu NETWORK - USER-DEFINED ATTRIBUTES - *Edit* button: Editing a UDA attribute like Code, Name or Comment etc. will no longer initialize current UDA values in the network. (**3653**)
- Menu DEMAND - DEMAND DATA - *Standard time series* tag - *Edit* button (time series by percentage): Editing the "FromDay" entry will no longer cause an endless loop of error messages. Now, continuous data processing is possible. (**3651**)
- Editing user-defined attributes is now possible in any network object dialog. Since version 9.03-03, data storage caused problems. This bug could be fixed. (**3659**)

Network Graphic

- *Display entire network* icon: Now, also "new" backgrounds are regarded for re-calculation of the display window on screen. (**3570**)

Attribute Interface

- Menu NETWORK - USER-DEFINED ATTRIBUTES: The size of the dialog box is kept for next call. Furthermore, *Delete* can now be executed in *MultiSelect* mode. (**3541**)

COM Interface

- *Modes.ItemByKey:* This COM method now regards the entered string as Code (instead of Name) of the mode in question. (**3666**)

Listings

- *New:* Via a context-sensitive menu, *Edit network object* dialog boxes can be called from listings now. (**3658**)

Add-ons

- *Background - Legend:*
  - *New file type *.LGD:* Graphics parameters of a legend can be saved to a separate file, cf. menu FILE - PROJECT DIRECTORIES and FILE - OPEN/SAVE. (**3610**)
  - For classified objects, space-saving labels are used in the legend now. (**3535**)
  - The *Finish* button can now be accessed from each of the dialog tags. Clicking through all tags until the last one is no longer required in case of parameter changes. (**3612**)
  - GRAPHIC - PARAMETERS - *Layer* tag: Now, a legend is only displayed as long as option ☑ *Draw legend* is active. (**3595**)
  - *Preview*: Even after toggling between *Preview* and *Normal* mode, the legend remains visible in the *Normal* network display on screen. (**3533**)

Miscellaneous

- *Read network file additionally:* Now, also vehicle journey items are read correctly in *Overwrite attribute* mode as well as in *Overwrite object* mode. (**3656**)

- *Read selected graphics parameters:* Reading graphics parameters specified for links will no longer affect those for POIs. In previous versions, e.g. image sizes and *Draw* flags of POI categories were modified by mistake. (**3647**)

- *Save network file with coupled groups*: If option "only active network objects" is active, only coupled groups of active time profiles will be saved to file (**3661**)

9.30-03	Corrections, Bug fixes and Extended Functionality (ID)	July 7, 2005

Discarded Program Crashes

- *PrT assignment:* A program crash will no longer occur during
  - Calculation of convergence criteriae, if demand is modelled as time series of matrices. (**3577**)
  - *Traffix* assignment of large networks. (**3573**)

- *Go to operation:* The program does not crash, if a non-existing attribute has been selected. (**3602**).

- SINGLESELECT - *Line route -*
  - *Edit - Profiles* tag: Deleting the very last time profile of a line route will no longer lead to a program crash. (**3619**)
  - *Create opposite direction* button: The program will neither crash nor display a warning like "Reroute time profile xyz: Time profiles may use only route points". Now, the line route and time profiles (including time data) are generated correctly. (**3632**)

- GRAPHIC - *Parameters*: The program will not crash, if characters like < or > are entered in a classification string. (**3603**)

- Menu FILE - SAVE - *Network file*: The .NET file is saved correctly, even if a second co-ordination group (without items) has been defined. (**3643**)

Menu CALCULATE - PARAMETERS - Procedures

- *Operations* tag: Two new buttons provided: *Check/Uncheck ALL* actions (lines) simultaneously. (**3649**)

- *PrT assignment analysis:* Now, tolerance calculation and graphical display correspond to each other. (**3620**)

- *PuT assignment - Timetable-based*: Instead of fares calculated with the VISUM tariff model, also user-defined fares can now be used for line costing calculations. The fare resulting for a connection can be saved per path leg and also be imported/exported with the connection. (**2523**)

- *OD matrix calibration (Lohse):* Also AddVal3 data can be used for matrix calibration based on count data; previously, the procedure could only use AddVal1 and AddVal2 data (**3637**)

Other procedures

- *OD Relations*: Now, the set of sub-attributes for skim matrices regards only those objects currently being kept in RAM. Without this restriction, the filter and graphics functionality had - without warning - to regard "0"-values in most of the cases. (**3597**)

- Menu FILE - *Open difference network*: Errors occuring during difference network calculation (caused by e.g. in-consistent input networks) are now detected earlier; detailed warnings will be displayed in this case. (**3579**)

Network Editor

- SINGLESELECT - EDIT - LINE ROUTE - *Coupling* tag: If a time profile is coupled with more than two other time profiles, then coupled vehicle journey sections will be generated for **all** of the coupled time profiles. In previous versions this did not work in case of more than two coupled time profiles. (**3019**)

- MULTISELECT - AGGREGATE - LINES / LINE ROUTES: If option *Aggregate line routes and time profiles* is active, now - in a second step - also the time profiles of remaining line routes are aggregated for each line route that has not been aggregated with other line route(s). (**3594**)

Network Graphics

- GRAPHIC - *Parameters - Desire line bar - Label:* Now also for Desire line bar labels, the color set under "Color = Bar color" (or "Text color" respectively) is used. (**3596**)

- SINGLESELECT - *Line route - Edit shape:* Drawing of line routes with numerous stop points has been accelerated (**3621**)

- GRAPHIC - *Parameters*:
  - By default, newly added bars are set to the ON state (= visible immediately). (**3605**)
  - Now, changes to *Text* default settings are stored; furthermore, no dialog texts will appear in English, if *German* = first language (**3482**)

COM Interface

- Access via COM has been accelerated. This becomes obvious especially in case of simple functions, where the time required for the COM command dominates the time required by the VISUM calculation. (**3598**)

- *Iteration over messages:* Iterator problems could be solved, *LoadVersion* etc. can be executed. (**3640**)

Timetable Editor

- Calling up the Timetable Editor - with active *Line filter* - via MULTISELECT - *Line routes*: VISUM now regards only the number of selected line routes. In previous versions, the number of currently active line routes was regarded by mistake. Thus, an incorrect warning was displayed saying e.g. "400 line routes selected", though only 2 line routes had been selected (highlighted in blue) from 400 active line routes. (**3628**)

- *Tabular - Hierarchical display mode:* In the left/bottom pane, the trunk with the VISUM-calculated sorting station is shaded in yellow (and other trunks are highlightd in light-grey, if available), thus indicating the structure of the hierarchy. (**3591**)

- *Regular services display mode - Export:* Also the very last data line is exported (in previous versions, this line was missing). (**3590**)

- *Graphical - Hierarchical display mode*: Now, also in the *Vehicle journey section* display mode broken lines are drawn indicating so-called branch-off stop points displayed twice (previously only in the *Vehicle journey* display mode). (**3589**)

- *Tabular - Classical display mode:*
  - Vehicle journey section data columns are now arranged correctly after fading out selected vehicle journey data lines. (**3588**)
  - The *Sorting station* remains active even if a vehicle journey is deleted after the sorting station has been set in the classical display mode. In previous versions, the *Sorting station* flag was deleted. (**3623**)

Matrix Editor

- *Generate New Matrix & Save:* When a newly created matrix is closed, the user now is queried "Save matrix?". Furthermore: Even if no file extension is specified, the matrix is now correctly saved to file. (**3616**)

Listings

- LISTINGS - PATHS - *PrT Paths*:
  - After program start or FILE - NEW (= "empty" version file): Opening the *PrT Paths* list will no longer cause a program crash.
  - If the list is not empty: Now, only the paths found for the currently selected o-d pair (FromZone-ToZone) are listed (previously, all paths of all o-d relations were listed). (**3639**)

Import Interfaces

- *EMME/2 Import*: Import adjusted to the VISUM9 network model, this way extending the VISUM8 feature. (**55**)

- *Paste attributes from clipboard (already #2883):* Works correctly now, even after data processing in Excel. (**3622**)

Export Interfaces

- *VISSIM Export:* PrT demand is exported with VISUM analysis time intervals (**2894**)

Add-ons

- *Line costing*: Even for vehicle journey sections with a dwell time > 0 at the last stop point served according to the time profile, indicator *NumBlocksTimeProp* is now calculated correctly for territories (**3580**)

- *Background:* Drawing background polygons has ben accelerated. Previously, in many HGR files styles were set for each of the polygons. Now only one style is stored (and checked for each of the polygons) until a different style occurs, which will also be stored. (**3566**)

Miscellaneous

- Menu FILE - OPEN VERSION: From elder version files (9.2/9.3), PuT paths are read correctly now. But reading *.VER files saved between July 1 and 6 (9.3) returns incorrect PuT paths caused by an edited sorting order. In this case, assignment has to be re-calculated. (**3650**)

- Menu FILE - PROJECT DIRECTORIES: The "*All*" edit box is no longer limited to max. 43 characters. (**3592**)

- Menu FILE - SAVE - *OD Matrices*: Now, parameter dialog and functionality are identical to the procedure provided via menu CALCULATE - PARAMETERS... - Operation *Save matrix from route volumes*: OD pair filter, assignment results and flow bundles can be regarded. (**2688**)

- *Network file*: Table *$MajorFlow* has been reimplemented. It contains only manually defined major flows deviating from the defaults (set automatically according to table *$TurnStandard*). (**3458**)

- *Hierarchical filters*: Any empty multi-level filter dialog now contains an automatically inserted empty line when it is opened. Thus, the initial mouse click on the "*Create*" button is no longer required. (**3604**)

- *Object model*: The currently used system of co-ordinates is identified automatically. The user may change to a different system. *Reading network data additionally* allows for changes, too: Data can be transformed into the desired system of co-ordinates. (**2698**)

9.30-02	Corrections, Bug fixes and Extended Functionality (ID)	June 24, 2005

Discarded Program Crashes

- *Blocked turns:* The program will no longer crash, if the *Turns* dialog is called for the turns on a node or from/to a link with all turns being blocked, when option "no display of blocked turns" is active simultaneously. A warning is displayed instead informing on the current setting of the display option. (**3548**)

- MULTISELECT - *Edit*: Editing an attribute being simultaneously active as a filter criterion will no longer cause program crashes. (**3557**)

- *Open network:* Reading VISUM8 network data from file will no longer cause program crashes. (**3524**)

- *Demand model - Time-of-day choice:* The procedure will no longer crash, if either
  a) no demand matrices have been assigned to the intervals of time series of matrices Intervallen or
  b) no input skim matrices have been assigned to intervals of any time series. (**3550**)

- *Open - Shapefile:* The program will no longer crash, if VISUM license size is exceeded when reading data from shapefile. A warning will be displayed instead. (**3455**)

Procedures

- Menu CALCULATE - PROCEDURES... - *Operations* tag :
  - For selection of an operation in the appropriate column of the combo box, a more comfortable selection tree is provided, which can be called by left-click directly from the grid. (**2971**)
  - New *operation* provided under *Miscellaneous*: *Set run and dwell times*. This functionality is the same as provided via MULTISELECT - EDIT - *Line routes* for network object *Time profiles* via *Set times* button (cf. Manual VISUM 9.2, ch. 4.19.4.5) and may optionally be limited to *only active time profiles*. (**3361**)

- *PuT assignment - Connection export:* For export without volumes, a new option is provided: "Regard all relations". If this option is active, all o-d pairs are evaluated and the paths found will be exported, even in case of no demand (similar to indicator calculation). (**3554**)

- *PuT skim matrices:*
  - New option to be set per indicator selected for calculation: Alternatively to "*over weighted mean*" also "*over weighted quantile*" can be selected for aggregation (Default: *Avg*). (**275**)
  - Based on a user-selected time profile attribute, now the aggregate value (Max,Min, Sum, Avg) of a connection´s path leg attributes can be calculated (replaces VISUM8 indicator *max. SubLin-AddVal 1,2,3*) (**3039**)

- *Demand model - Mode choice:* Now also providing Box-Cox parameter *Tau* for impedance calculation (the utility function is not concerned). (**1136**)

Network Editor

- SINGLESELECT - *Link - Edit*: After clicking the *PuT-Sys* tag, permitted TSys will not be blocked by random. This error occured only occasionally. (**3555**)

- *Numbering & range check:* A warning is now displayed in case of interactive input of a value exceeding the permitted value range (e.g. NodeNo. > 2147483647 (2^{31}-1)). In previous versions, the entered value was automatically replaced by the max. permitted value. (**3546**)

- MULTISELECT - *Zones - Generate*: This procedure known from VISUM8 has been re-implemented. (**1883**)

- MULTISELECT - *Nodes - Aggregate (Integration of isolated nodes)*: Additionally to the existing options (*Integrate isolated nodes either "as nodes" or "as stop points"*) a third option is provided: *"as nodes with stop point"*. Prerequisite: Option *Permit creating on links* needs to be checked. Instead of placing stop points on links, the links will be split (related to 1640). (**1556**)

- MULTISELECT - *Nodes - Delete*: If option *Connect links* is active for 2-leg nodes, now Node-StopPoints can optionally turn into Link-SP (as in previous versions) or be deleted alternatively (related to 1556). (**1640**)

- SINGLESELECT - *Line route - Edit - Profiles* tag:
  - *Reference trip*: In previous versions, displayed arrival/departure times always referred to the virtual Start departure time 00:00 at the beginning of the time profile. For better understanding of time data, the times of a user-selected reference trip (one of the vehicle journeys of this time profile) are output in this tag now. The absolute temporal position of the reference trip takes an effect of the displayed attributes *Arrival* and *Departure*. (**2571**)
  - *New time profile items attributes:* Input attribute *TP-FarePoints*, being regarded for fare calculation, and output attribute *Link-FarePoints* (= TP-FP + Fare points).
    For *TP-FarePoints,* negative values are permitted, whereas *Link-FP* have to be positive. (**2525**)
  - *Copy time profile:* all vehicle journeys can optionally be copied with the time profile (**2437**)

- *Merging neighbouring nodes:* Incident link polygons are now connected correctly. In previous versions, certain polygons used to be dropped by mistake. (**3562**)

Network Graphics

- *Marked links:* Blocked links being marked interactively will always be highlighted by a thin line, thus clearly indicating the "blocked state". (**2852**)

- *Tables at count locations:* are now displayed in the correct position. (**3526**)

- *Display of fillings in Preview Mode:* Fillings set for polygons from HGR files and for bars along links with specified shape are now also displayed in the Preview mode. (**3558**)

- *Draw bars:* Now, the layer order set up in the *Links - Link Bars* tag is always used. (**2905**)

- *Preset bar colors:* Now, two classes with default color settings are provided for *Filling* (=coloring) of attribute bars (e.g. along links): *red* for negative values and *green* for positive values. This will ease *Difference* display mode parameter input. (**3559**)

Timetable Editor

- *Graphical timetable - Hierarchical display mode:*
  - Correct graphical display of the stop (point) sequence, even after clicking *Invert sequence*.. (**3486**)
  - Trips in opposite direction directly departing from the start of the trunk and terminating before the trunk are now displayed completely in the "hierarchical" display mode. (**3552**)
  - Line routes being COMPLETELY identical in the sections before/after the trunk are now longer displayed separately, but merged to just one branch. (**3544**)

- *Graphical timetable - Vehicle journey items:* Only a SINGLE time profile item label is displayed, even in case of dwell time > 0. (**3543**)

- *(Un)check vehicle journeys:* Multiple successive clicks on a trip´s check box in the *Markings* line are now regarded accordingly, not as if being just one click. (**3505**)

- *24h View:* Optionally, arrival and departure times can be displayed in the *modulo 24h* mode (for e.g. 26:30 (p.m.) then 2:30 (a.m.) will be displayed instead). (**2576**)

COM Interface

- *Messages object:* Iterating over *message objects* entries using "for each" will now also return the first message entry (used to be missing). (**3501**)

- In rare cases, COM methods such as *SaveVersion* were performed twice due to internal timing problems, often leading to a program crash. This bug could be fixed. (**3468**)

- *Register COM:* Via *Update93.exe*, COM is registered automatically. (**3563**)

Import Interface

- *Open Attribute file / Import from clipboard:* Line route and time profile (items) data can also be read from file, if they contain the "ID" key attribute instead of the original key attributes "LinName"+"DirCode"+... . (**3478**)

- *Open - Shapefile*: A detailed error message is displayed, if an invalid string is connected with an attribute of the *TSysSet* type. (**3443**)

Add-ons

- *Line Costing*:
    - Attribute *NumBlocks* is now calculated correctly for objects of the line hierarchy, even if there are vehicle journeys with more than one vehicle journey section in the network. (**3457**)
    - For halts lasting to the next day, stop point cost is calculated correctly now (used to be summed up from 2 days) (**3485**)
    - Attribute *PTripsTSys* is now also returned by area (evaluating paths). (**2051**)

- *Subnetwork Generator:*
    - *PrT network only:* New option "Connect external zones by connecting links" has been implemented to avoid deviating PrT assignment results caused by the fact, that external network zones used to be connected to the "entry node" to the active network only, thus disregarding the attributes, e.g. penalties, of turns leading via this node and turning prohibitions as well for flows originating from those external zones. If this option is active: For routes entering the subnetwork via a node, the last link used outside of the subnetwork will serve as a connecting link template. The entry node = the connecting link´s ToNode, the FromNode of the connecting link will be generated. VISUM will assign the same number to all network objects (connecting link & subnetwork external zone & node) generated per entry node. (**3492**)
    - *Timetable-based and Headway-based assignment only:* For a PuT path starting from within the active subnetwork, but leaving the subnetwork already before the end of the first path leg, then an external zone is generated at the exit point of the path thus avoiding demand data losses. Furthermore, the line route is now cut correctly in this case. (**3576**)
    - Current procedure parameter settings are now stored with the generated Subnetwork.VER file. (**2139**)

Miscellaneous

- *Time period data:*
    - Now, duration values are always displayed according to the current global setting in the EXTRAS - OPTIONS - *Time format* tag. Thus, "0min" is returned for duration = zero, if *Minutes* is checked. In case of "70s", "1min10s" will be returned. Applies also to the network file: Data files containing different time data formats will be read correctly. (**3491**)
    - Also for *Copy from clipboard*, the current option setting (min/sec) is regarded for values without unit. In previous versions, values were interpreted as being seconds, even if "min" was active. (**3542**)

- *Open network file:*
    - *Links:* Key attribute "*LinkNo.*" is no longer mandatory. If missing, VISUM will assign free link numbers automatically. This feature has been implemented for data import from external systems storing only FromNodeNo. and ToNodeNo. as the only key attributes for links. (**2301**)
    - *Time profiles:* Reading a time profile item with Board/Alight = 1 at a stop point not permitted to be used by the TSys is now logged to the *Error.txt* file. The *Read network* routine remains unchanged (the line may not serve this stop point). (**3488**)

- *Program start:*
    - *Standard Project path file:* Automatic std.pfd loading orks correctly again, when the VISUM is started; error messages are no longer logged to error.txt. (**3561**)
    - *Start option -h* (Read version automatically when starting VISUM) works correctly again. The same applies to double-clicking a version file in the Explorer. (**3560**)

- *Database Import/Export:* The password will no longer be displayed when messages are traced to the Error log file. (**3330**)

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Discarded Program Crash

- *Multiselect - Edit*: VISUM will no longer crash, if the value of the assigned attribute exceeds the value range of the target attribute. (**3495**)

Procedures

- *PrT assignment:*
  - The value ranges of parameters b and b' were expanded from 0..10 to 0..100 in the *TModel volume-delay functions* (**3512**)
  - *Impedance calculation at node (tCur):* The calculation procedure (Junction control or volume-delay function for turns or nodes) can now be selected individually for each (type of) node. (**1858**)
- *PuT assignment:* Zone attribute *PTripsLinkedTot* is now also returned by *headway-based* assignment, not only by *timetable-based* assignment.(**3519**)
- *Assignment PrT/PuT:* A 'Rounding errors' warning is displayed when assignment starts, if less than the number of decimal places of the assigned matrices are used for assignment. (**3540**)
- *Nested Mode Choice:* All parameters (e.g. the log sum coefficient) of the Nested Mode Choice that were still missing are now included in the binary parameters file (*.par). (**3493**)

Network Editor

- *Generate connectors:* This functionality now also works with a scale other than 1. In previous versions, the entered maximum distance along x-axis was not multiplied by scale. (**3517**)
- *Aggregate isolated nodes:* Now both directions of a link are regarded for option *Create only on active network links*. At least one of the directions has to be active. In previous versions, only the link direction with FromNodeNo. < ToNodeNo. was regarded. (**3499**)
- *MultiSelect - Edit - Intersect:* For target objects of type GIS object and POI, VISUM now sets the attribute for ALL objects, too. Up to now, only the last network object was set properly in some instances. (**3513**)
- *Edit stop point:* Double-clicking a stop area in the *Find stop area* window integrated in the stop point dialog box that is used to assign a stop area now also selects the respective stop area (a different stop point dialog box was activated so far). (**3532**)
- *Tabular definition of line routes:* When defining line routes based on system routes, VISUM now always adopts the run times of system routes correctly. (**3515**)
- *Editing line routes:* When switching from the line route dialog box to the *Edit shape* mode, both clicking *OK* and clicking *Cancel* in the *Edit shape of line route* dialog box lead back to the *Edit shape* mode. (**3497**)
- *Automatic numbering of vehicle journeys:* Added or coupled vehicle journeys are numbered according to the current setting under EXTRAS - *Options - Lines* tag. Standard: Direction 'Up' = even numbers, Opposite direction 'Down' = odd numbers. (**276**)

Network Graphics

Link bars: The hatching of bars along digitized and straight links is now the same. (**3360**)

Attribute Interface

VehicleJourneyItem.PostLength and PreLength: Now zero is also returned as *PreLength* value of the first item of a vehicle journey if this item differs from the first item of the time profile. Applies to *PostLength* accordingly. (**3491**)

Timetable Editor

- *Copy timetable into clipboard:* All departure times are now copied correctly again. In the past, the word 'Departure' was displayed. (**3496**)

COM Interface

- *Deleting networks with existing references:* Functions *Net::Clear, Visum::LoadVersion, Visum::LoadNet, Visum::LoadAccessDatabase, Visum::LoadFromMsSqlServerDatabase, Visum::OpenDifferenceNetwork, Visum::ImportEmmeProject, Visum::ImportHafasProject* and *Visum::ImportEDF* now report an error should there be further external references to network objects. Such references could lead to a crash at the time of deleting a network. (**3527**)
- *Procedure parameters Dump file:* This file is now released from the moment it is saved. In the past, it was released not until the program was ended. (**3514**)
- *SetObjects ():* COM method *SetObjects* of block items list has a new (optional) parameter that is used to restrict the number of rows to a specified block. For details please refer to *Visum93ComDocu.pdf.* (**3511**)
- *Set single objects to the active/passive state:* When running this function via COM, a transaction was not closed internally which led to crashes during further operations. The problem has been solved. (**3528**)

Export Interface

- FILE menu - *Save – SVG files*: The SVG export now also includes backgrounds, flow bundles, digitized bars and bar labels. (**2504**)
- Menü DATEI - *Exportieren - VISSIM*:
    - *PrT demand* tag now provides option *Export node routes (user-defined volume)* (**3483**)
    - Improved LookBackDistance modelling for VISSIM connectors in nodes modelled with weaving sections (**3463**)
    - Improved modelling of link polygons for connectors from/to ramps (**3464**)

Timetable-Network Graph

- *Timetable-Network Graph* in the EXTRAS menu: The display has been improved. (**3510**)

Add-ons

- *Line costing:* In case of stops lasting to the next day, double stop point cost values were calculated. (**3485**)

Miscellaneous

- *Reading from the clipboard:* Re-reading list contents from the clipboard now works correctly again even if data were originally exported to Excel and have been edited meanwhile. (**2883**)
- *Calculate service trip patterns:* In some networks, this functionality did not work. Zero was returned as constant pattern No. This bug could be fixed. (**3498**)
- *Display entire network:* This function now also works in networks with extremely large coordinates according to amount. (**3426**)
- *Writing versions with a backup copy*: VISUM now intercepts more errors than before, e.g. those caused by system errors when copying files. Moreover, error messages are now more detailed. (**3516**)
- *Resetting the symbol bars*: This operation now also affects the menu bar (**3104**)
- *Lists*: Display and editing of internally predefined Enumeraion types in list columns has been made more comfortable. Instead of IDs (in CAPITAL letters), translated names are now displayed. (**3523**)
- *Updating lists:* When the *OD pair filter* settings are changed, dependent attributes that are already displayed in lists are now updated automatically. (**3502**)