VISUM Release Notes

Version 9.3

Version 9.35-07

Last modified: 2007-05-10

9.35-07	Corrections, Bug fixes and Extended Functionality (ID)	May 10, 2007

Discarded Program Crashes

- NETWORK - LINK TYPES: VISUM no longer crashes when clicking option *Types* if it is activated already. (**5452**)

- *Graphics*: VISUM no longer crashes when drawing the network or graphical timetable window if certain dotted line types are being used. (**5359**)

- *MPA:* VISUM no longer crashes following the evaluation of PuT paths if MPA has been activated and several PuT demand segments are assigned. (**5931**)

Procedures

- *PrT assignment - TributEquilibrium_Lohse:* The calculation of the assignment is much faster now. (**5679**)

- *Blocking-back model*:

  - *Remaining capacity*: If all downtream turns of a link are blocked, the outgoing capacity of the link equals 0, i.e. the traffic cannot exit the link. However, if at least one open destination connector starts at the ToNode of the link, the outgoing capacity is now set to infinite, so that traffic can flow freely to the destination connector. (**5374**)

  - *Turn volumes*: In cases where the volume of a turn had been reduced by the blocking-back calculation, the amount deducted from the turn volume used to be too large. Values at links and connectors were yet accurate. The error has been fixed. (**5377**)

  - *Node capacity*: is now also regarded in phase 2 of the computation (applies only if Cap from "Link and Node capacity" or from "Turn and Node capacity" is active) (**5407**)

Other Procedures

- *Assignment analysis:* Option *Only active network objects* now also has an effect on *R2* and *Correlation Coefficient*. (**5969**)

Network Editor

- MULTISELECT TURNS - DELETE: Passive turns that are blocked for all TSys are now also excluded. The blocking of TSys in general does not influence the active/passive status of network objects. (**5501**)

- *Coordination groups:* When exiting dialog box *PuT Coordination groups* with "Cancel", VISUM used to produce coordination group items without cross-references to a group. Saved network files that included such coordination groups could not be read in again afterwards. The error has been fixed. ()

- *Splitting a link:* When splitting polyline links (also in the context of the aggregation of nodes), the lengths of the two newly created links are now calculated correctly from the former total length of the link. Link stop points thus no longer "shift". (**5913**)

Matrix Editor

- *Code files:* For the gravitiy calculation, code files may now contain blank lines or comments at the end. (**5405**)

- *Log display*: All columns are now initially visible in the log display of the matrix editor. (**5591**)

Listings

- *Shortest path search PuT:* The list now also issues the toll of the path. (**5629**)

Miscellaneous

- Menu CALCULATE - CHECK NETWORK: The functionality "Network consistency PrT" no longer produces wrong results after editing the network topology. (**5747**)

Reading version files:

- Version files are now read in faster when a filter is active. This is particularly noticeable if the line filter or the stop filter is active. (**2287**)

- Following the deletion of a PuT TSys, in rare cases, subsequently saved versions were no longer readable. The error has been fixed. (**5895**)

9.35-06	Corrections, Bug Fixes and Extended Functionality (ID)	Sept. 18, 2006

The French VISUM User Manual has been updated; version 9.3 is now available for download.

Discarded Program Crashes

- *Read network or database additionally:* VISUM no longer crashes if invalid attribute values of type *TSysSet* are read additionally from network file or database. "Invalid" means: TSysCodes not being defined in the network. (**5264**)
- *Generate subnetwork*: VISUM no longer crashes when generating a subnetwork if one of the selected demand segments is not allocated to an OD matrix. (**5272**)

Procedures

PrT Assignment: If a zone's connectors are all of a weight = 0, paths to and from this zone are no longer found in MPA assignments. (**5211**)

Network Editor

Autozoom: The autozoom of the network editor no longer worked in the special case of isolated nodes with no connectors. The error has been fixed. (**5274**)

Listings

Allocating stop areas: A stop area with no access node can now be allocated to a different stop by editing column "StopNo" of the list which used to fail if a stop area had no access node. Internally, it led to corrupt data producing corrupt version files. (**5210**)

Miscellaneous

Reading networks: VISUM now reads line route items correctly if option *Create stop point* is checked. (**5275**)

9.35-05	Corrections, Bug Fixes and Extended Functionality (ID)	Aug. 16, 2006

Discarded Program Crashes

- *TFlowFuzzy*: Activating the TFlowFuzzy in an empty network no longer causes a crash. (**5063**)
- VISUM no longer crashes when trying to assign invalid strings to an attribute of type *TSysSet* via MULITSELECT - EDIT. (**5108**)
- *Listings*: VISUM no longer crashes if the settings of a filter leave an open list (which is in mode "only active") empty. (**1397**)
- *Timetable-based assignment*: The program no longer crashes during the assignment in the occurrence of a transition from the final section of a PuT ring line to a TSys of PuT-Aux. (**5172**)
- *Connection import*: VISUM no longer cancels the import if the connection file contains paths that possess a ring line transition with a duration that is shorter than the minimum transfer walk time defined at the respective stop. This walk time is of no importance to the ring line transitions and may thus not be validated at this point. (**5178**)
- *Reading networks*: Blank values ("") for enums are now interpreted as the enums' default values. So far, VISUM actually assigned the blank value which is always invalid for enums. Subsequent access sometimes caused a crash. (**5156**)

Procedures

- *PrT assignment - Shortest path search:*
  - When searching for *t0* or *tCur*, VISUM now rounds and no longer cuts time values in specific situations. The calculation is thus more accurate. In individual cases, this might alter the results of PrT assignments, PrT isochrones and A-B shortest path searches. (**5149**)
  - VISUM no longer assigns (invalid) negative values to turn attribute *TraffixFinalSat* in the occurrence of calculation errors within Traffix. Such invalid values are corrected automatically when reading in older versions. (**5065**)
- Menu CALCULATE - PROCEDURES - *Demand model - Trip generation:* In the grid of the parameters dialog box, coefficients can now be edited with Copy & Paste again. (**5109**)

Miscellaneous

- EXTRAS menu - PROGRAM STATUS: The number of POIs and GIS objects displayed in column *selected* is now correct. So far, VISUM displayed the total number instead of the selected objects. (**5084**)

9.35-04	Corrections, Bug Fixes and Extended Functionality (ID)	June 27, 2006

Procedures

- *PrT assignment:*
  - Even after the cancellation of an MPA assignment which results in the deletion of the assignment, all internally effected zone splits are now undone so that a valid network status is available. (**4976**)
  - *VolCapRatio*: The calculation of the link attribute is now based on the OD pair filter (like all volume attributes). (**4977**)
  - *Stages - SCJ optimization*: When optimizing the green times of stage based SCJs, VISUM no longer produces ambiguous results due to numerical instabilities. (**4948**)

Listings

- *PuT OD pairs:* The list is now also correctly updated if an assignment is calculated anew or if the DSeg selection is modified. (**4937**)

Add-Ons

- *Calendar*: When editing a valid day, templates (vacation day or valid day) now also work correctly if the validity of the time period of the day is restricted in the upper right side of the dialog box. (**4938**)

9.35-03	Corrections, Bug Fixes and Extended Functionality (ID)	May 17, 2006

Other Procedures

- *Line Blocking*: The time slot which can be set since VISUM 9.4 is now defined by a start day and an end day and no longer by specific times. This is essential in order to allocate vehicle journeys with a departure time of 24 to 48 o'clock clearly to a particular day. (**4618**)

Network Editor

- MULTISELECT - EDIT - *Formula:* In case of attributes of type *Time period*, VISUM now also correctly interprets the value of the last input field if the global time format is "Minutes". (**4915**)

Network Graphics

- Bars of a "minimal width" are now also displayed if the bar polygon contains points with partly identical coordinates, e.g. in case of a vertical link. (**4890**)
- When scrolling or zooming causes a refresh of the display while VISUM has not completed a prior drawing process, the display is now refreshed correctly anyway. (**4877**)

Timetable Editor

- *Shifting a vehicle journey forward*: Relocating the start of a vehicle journey in the timetable tableau does not lead to negative arrival times any more. (**4804**)

Add-Ons

- *PuT operational indicators*: VISUM now always allocates stop attribute *NumServiceTrips* (AP, AH) during indicator calculations and not just when calculating infrastructure costs of stops as well. (**4911**)

9.35-02	Corrections, Bug Fixes and Extended Functionality (ID)	Apr. 26, 2006

Discarded Program Crashes

- VISUM no longer crashes when generating new analysis time intervals, if the network contains PuT detail objects that are territory-based at that point. (**4557**)
- The program no longer crashes when deleting stop areas in mode MULTISELECT. (**4571**)
- Reading desire line graphic parameters into an empty network no longer causes a crash. (**4803**)
- Option "Set objects in territory to active state" no longer causes a crash, if a territory possesses more than 4096 digitalisation points. Even in combination with multipart surfaces, "Set objects in territory to active state" is now carried out correctly. (**4581**)

Procedures

PrT assignment: The calculation of *tCur* with volume-delay function Akcelic contained a unit-related error. VISUM now returns different PrT assignment results when calculating with this function. (**4816**)

Network Editor

SINGLESELECT mode - EDIT TURNS - *Basis*: Value *tCur* box is now rounded correctly. (**4797**)

Network Graphics

The line width of turn volumes has been reduced to 0.3 mm. (**4874**)

Attribute Interface

VISUM now also generates vehicle journey items automatically in case of an access via indirect attributes (via vehicle journeys or time profile items). (**4772**)

COM Interface

Clearly less run time is required for COM method *Visum.LoadNet* now, if a large number of line route items is read in additionally and if no parameter block is delivered for the completion of line routes when calling up the command. (**4572**)

Listings

Passenger transfers list: Button "All" for the selection of stops works correctly again. (**4789**)

Import Interfaces

Database and network imports are now also done accurately in any language other than English, if it includes attributes that have been renamed in VISUM in the meantime. (**4854**)

Miscellaneous

Reading networks: When reading in undirected link stop points from a network file, distances too short are now rejected (as in the network editor). Distance means the discrepancy of the RelPos values. Distances up to one one-thousandth are always accepted. (**4579**)

9.35-01	Corrections, Bug fixes and Extended Functionality (ID)	Apr. 04, 2006

Discarded Program Crashes

- MULTISELECT LINKS - EDIT: If a TSys was permitted on links that were formerly blocked for all TSys, VISUM used to crash when subsequently activating the node editor. The error has been fixed. (**4779**)

Procedures

- *PrT assignment*: TCur is now updated right away after the deletion of a PrT assignment and not just when calculating a new assignment. (**4703**)

Network Editor

- *Find node* dialog box: The *AutoZoom* button no longer disappears. (**4712**)
- NETWORK - PUT COORDINATION GROUP - *Create*: VISUM no longer inserts a coordination group when exiting the respective dialog box with "Cancel". (**4802**)

Network Graphics

- BACKGROUNDS: Any line widths below 1 mm are now reproduced as "thin" lines when reading in HGR files. (**4742**)
- Labelling option "Color=Bar color" of links and other bars now also works, if option "Show value" has not been checked. (**4675**)

Timetable Editor

- If the language is set to *Russian*, the timetable editor now also shows the correct translations. (**4725**)

Add-Ons

- *Subnetwork Generator*: The calculation of the subnetwork is no longer cancelled, if the network contains surfaces that do not feature any faces. (**4704**)
- *Background*: Users can now set relative paths for background files. This makes it easier to transfer networks from one computer to another. (**4281**)

Miscellaneous

- *Shapefiles*: Shapefiles written with VISUM that contain numerical data with decimal places now comply with the global shapefile format and can thus be read by ArcView etc. (**4701**)
- *Reading networks*:
  - Network files that are "more recent" than the used VISUM version can now also be read into "older" VISUM versions (as of version 9.3). In this case, VISUM issues a warning at the start of the read operation that indicates the possible loss of data. However, most data (especially basic network data) never changes its format so that conflicts generally do not occur even when reading in more recent networks. VISUM merely issues warnings in the occurrence of attributes that were added in the meantime. (**4648**)
  - Table *link type* of network files used to be read in independently of the user settings, thus disregarding options *ignore* and *cancel*. The error has been fixed. (**4681**)

9.35-00	Corrections, Bug fixes and Extended Functionality (ID)	Feb. 24, 2006

Discarded Program Crashes

- VISUM no longer crashes, if the zones to be read in additionally are not sorted in ascending order of their keys. (**4645**)
- Crashes no longer occur when checking "active lines only" in the *Create line route* dialog box, if all lines are passive at that time. (**4653**)
- *PrT Assignment*: The program sometimes produced "corrupt" path data structures that led to a crash when accessed anew (e.g. via a flow bundle) when calculating PrT assignments after the deletion or creation of links without saving and reopening the network in between. The error has been fixed. In old version files that contain such corrupt paths, assignments need to be calculated anew. (**4662**)
- *Aggregating nodes*: VISUM no longer crashes during the operation, if links are split under certain conditions. (**4666**)

Procedures

- *PuT Assignment:* The program no longer multiplies indicator *In-vehicle distance by TSys* by 0.001, when saving length-related PuT indicators as "long lengths". Instead, indicator *In-vehicle distance by TSys* is now issued in kilometres or miles in this constellation and not in metres. Indicator *In-vehicle distance percent by TSys* which depends on it also used to be too large by a factor of 1000. (**4655**)

Network Editor

- *Coupling*: The program no longer deletes vehicle journeys of involved time profiles in the process. (**4639**)
- *Lines/Line routes*: The dialog boxes used to select these network objects now show a display reduced to all active objects when activating option "only active" - no matter whether they were selected in the dialog box beforehand. (**4442**)

Network Graphics

- POI images that were rotated are now printed in the correct size. (**4670**)

Import Interfaces

- *Shape files*: VISUM now correctly transforms the co-ordinates of point shape files that are read in additionally as nodes. (**4631**)

Add-Ons

- *Subnetwork Generator*: Links with just one active direction were not included in the subnetwork in certain cases. This error has been fixed. (**4613**)
- *Environment*: The pollution per link is now saved with the version file. (**4591**)

Miscellaneous

- *Save version*: Connector weights are now saved to the version file as 4-byte integers. Numeric overflows thus no longer occur when applying values that are larger than 127. (**2061**)

9.34-04	Corrections, Bug fixes and Extended Functionality (ID)	Feb. 09, 2006

Procedures

- *PrT Assignment*: The timetable-based "Shortest Path Search" now also works correctly if the assignment interval does not coincide with the beginning of the analysis period and connections which go beyond the end of the analysis period are charged at the same time. Please note: Assignment option "Branch & Bound" was not affected by this error. (**3480**)

Network Editor

- *Split link*: TSys AddVals are now copied and not scaled when splitting links. They now correspond to the regular link AddValues. (**4597**)
- *Lines/Line routes*: In the dialog boxes used to select these network objects, check box "only active" now once more causes the expected display of all active objects only - irrespective of the prior selection that was set in the dialog box. (**4442**)

Network Graphics

- The graphic marking of PuT shortest paths now also includes path legs of type PuT Aux. (**4603**)

Attribute Interface

- Attribute "cost" of TSys, line, vehicle journey and other network objects is now also set if the operating performance yet not the infrastructure costs are calculated within the scope of the PuT operational indicators. The "cost" then consists of kilometer, hourly and vehicle costs, the infrastructure costs are considered not specified. (**4560**)

Timetable Editor

- *Graphical timetable with hidden stop points*: The program no longer draws a vehicle journey/vehicle journey section, if just one of the two limiting stops is visible in the graphical timetable. (**4394**)

Matrix Editor

- *Permitted zone number limit:* In the Matrix Editor, the upper limit is now identical to the one used in VISUM (slightly more than 2.000.000.000) and no longer 999.999.999. (**4601**)

Import Interfaces

- *EMME/2*: VISUM no longer issues the illogical error message "ID ... not found" when reading in an EMME/2 parameter file which contains invalid paths. (**4425**)

9.34-03	Corrections, Bug fixes and Extended Functionality (ID)	Jan. 30, 2005

Discarded Program Crashes

- Crashes no longer occur when terminating the program while dialog box "Create stop point" is displayed. (**4475**)
- VISUM no longer crashes when manually dismantling unintended loops on line routes by editing its shape. (**4486**)

Procedures

- *PuT Assignment:*
  - *Save paths as routes:* When using a) a calendar and b) an analysis period that does not start at the same time as the calendar, several time entries for PuT paths were issued incorrectly in the paths and path legs listings. The error has been fixed. (**4416**)
  - *Deleting a time profile*: The PuT assignment result is now always deleted when deleting a time profile - even if the time profile does not have any vehicle journeys. (**4417**)

Other Procedures

- *Assignment analysis - Parameters* button - *Tolerances* tag*:* In column *Tolerances,* entries without units are now interpreted as a percentage and no longer as relative values which led to a multiplication by 100. (**4471**)

Network Editor

- *Set run times and dwell times:*
  - The value type is now evaluated correctly both at the origin and the target attribute, so that allocations between different value types always work out, e.g. if time := sum (link length) - in this case, the length is now automatically interpreted in kilometers or miles dependent on the currently set units system. (**4393**)
  - Correct values are now also allocated, if "blank values" provide the data source due to the use of indirect attributes. Example: time := sum of the AddValues of all traversed links, if no link (centre) is located between two stops. Such "blank values" are now treated as zeros during the calculation. (**4427**).
- If a link with a FromNode and a ToNode that have identical coordinates is split, VISUM now sets a link length of zero and scales all other attributes at the ratio of 50:50. So far, a "faulty" link length of "-1#.IO" was entered that caused problems during subsequent processing of the data (e.g. reading networks). (**4449**)
- MULTISELECT - *Intersect*: The program no longer produces false calculations when setting particular buffer sizes (often the ones close to zero). (**4437**)
- *Aggregate isolated nodes*: Users can now cancel the operation. (**4472**)
- The network editor zooming functionalities are now also available when editing the shape of territories. (**4030**)

Network Graphics

- *Labeling flow bundle bars*: Decimal places are now correctly included in the labeling. (**4413**)
- *Drawing main zones*: Main zones are now also displayed in the network, if no zones exist within the network. (**4412**)
- *Drawing polygons*: Polygons of zones and territories etc. that were not supposed to be drawn from a certain zoom level, were still displayed in former versions. The error has been corrected. (**4418**)
- *Creating backgrounds*: VISUM now continues the loading process of a version file, if loading a background file fails (e.g. due to an invalid path). (**4544**)

Attribute Interface

- VISUM now always considers the global *time period* setting (min/sec) under EXTRAS - OPTIONS for allocations (a) via MULTISELECT EDIT to a user-defined attribute of type *time period* or (b) to any *time period* attribute via procedure "Edit attribute". In the past, seconds were used at all times. (**4428**)

COM Interface

- Function *ActSelection* now returns a *NetElems* collection of the currently selected object (if existent) in the SingleSelect mode and no longer all objects selected via MultiSelect. (**4512**)

Listings

- LISTINGS - PATHS - PUT OD PAIRS: VISUM now issues the direct distance speed correctly. So far, the program always returned zero. (**4541**)

Import Interfaces

- *Reading shapefiles:*
  - Blanks are now automatically deleted at the beginning and at the end of strings, which results in less errors during data validation. (**4426**)
  - When reading shapes additionally, so far, the program did not consider the set coordinate system. This error has been corrected. (**4568**)

Add-Ons

- *Subnetwork generator*: When activating the subnetwork generator, VISUM no longer issues interactive warning messages on adjustments of vehicle journey sections. (**4446**)
- *Timetable Network Graph:*
  - The *Shift mode* (hand) can now be exited by switching to the SINGLESELECT mode - there is no need to click the *Refresh* icon any more. (**4459**)
  - Operating the *Shift mode* in the Timetable Network Graph and then clicking *Refresh* no longer affects the drawing of the network window. (**4461**)

Miscellaneous

- *Reading networks:*
  - The program now correctly intercepts that zones, main zones and territories may not have any <u>open</u> polygons as faces. Such invalid references are now deleted once the network file is read in and saved to the error file. (**4410**)
  - *Additionally*: VISUM now processes setting "ignore" correctly when reading table *FaceItem* additionally. The data sets in the network file are thus ignored if they have an identical key. (**4406**)
  - When utilizing *Conflict avoidance* while reading networks, the program no longer produces an overflow that causes negative numerical keys to enter the network due to the allocation of extremely high numerical offsets. (**4374**)
- When reading in old version files (VISUM 8 or older), count locations are no longer mistaken as passive, if no filter has actually been set. (**4420**)

9.34-02	Corrections, Bug fixes and Extended Functionality (ID)	Jan. 9, 2006

Discarded Program Crashes

- The Uni version no longer crashes, if zone attributes are read in additionally from a network file or if a zone list is imported via the clipboard. (**4377**)

Procedures

- *PrT assignment:*
  - *Blocking-back model*: When calculating the blocking-back model with several assigned PrT demand segments, VISUM sometimes returned contrasting results due to an instable processing sequence. (**4379**)
  - *Calculation of impedances at node*: is now calculated correctly during the assignment when setting method "Turns VD-function" or "Nodes VD-function" yet for some individual nodes "Junction control". In the past, VISUM also used to apply the global setting to the individual nodes in this instance. (**4382**)

Other Procedures

- *PuT Shortest Path Search*: When starting the search at a stop area, passengers no longer need to cover the distance of a redundant "loop" of walk links at the beginning of the path. (**4381**)
- *Difference network*: VISUM now interprets vehicle journeys and vehicle journey sections as identical, if they have the same key in *Network1* and *Network2* and are assigned to the same time profile. (**4399**)

Network Editor

- *Generate connectors (PuT)*: Isolated nodes can now also be connected. The existence of just a stop area is thus sufficient. (**4385**)

Network Graphics

- The "minimum width" of bars now yields the same results in the preview mode/when printing as in the network window. In the past, contrasting thresholds were used. (**4311**)
- *Invisible nodes/links*: Nodes and links no longer "disappear" in the display, if node coordinates have been manipulated via MULTISELECT EDIT. (**4342**)

Attribute Interface

- Invalid attribute IDs, e.g. such with blanks, are now rejected when creating user-defined attributes. (**4369**)

Timetable Editor

- The attributes of dialog box *Parameters* as well as the status of *Invert stop point sequence* are now part of the layout file. They are set accordingly when the file is read in. (**4380**)

Listings

- *Time columns*: The program now correctly interprets formats seconds and minutes in column type *time* even if the entry has no units. The entries used to be interpreted as hours. (**4390**)

Import Interfaces

- *EMME/2*: Information on EMME/2 link types which are saved as user-defined attributes in VISUM is now imported 1:1 even for values greater than 99. So far, VISUM mistakenly calculated modulo 100. (**4386**)
- *HAFAS*: VISUM now also correctly identifies the special departure time '99999' of traversed stops during the import. (**4389**)

Export Interfaces

- During the XML export of the procedure parameters, VISUM now issues warnings only for the procedures for which the parameter export has not been implemented yet. In some cases, warnings were also issued where an export was actually possible. (**4391**)

Add-Ons

- *TFlowFuzzy*: Option "only active turning relations" is now considered correctly. (**4378**)
- *LLE*: VISUM used to compute vehicle journey attributes *SeatCap* and *TotalCap* calculated in the context of the PuT operating indicators incorrectly. The shorter a vehicle journey, the higher the impact of the miscalculation. The error has now been corrected. (**4396**)

9.34-01	Corrections, Bug fixes and Extended Functionality (ID)	Dec. 16, 2005

Discarded Program Crashes

- VISUM no longer crashes when deleting a POI category which is currently displayed in the legend. (**4324**)
- DEMAND - PROJECTION OF ROUTES: The program does not crash anymore if no link is selected in the network during the calculation. (**4352**)
- CALCULATE - PROCEDURES - *Edit attribute:* The failure of a data conversion no longer leads to a crash (converting e.g. a comma separated *length* value into a *time period*). (**4355**)
- *PuT Flow bundle*: (error occurred as of version 934000) A definition with *active time profiles* does not cause a crash anymore. (**4360**)

Procedures

- *PrT assignment:*
  - *Multi Point Assignment*: Correct results are now also achieved in the special case that a zone has exactly one connector with open PrT TSys and a weight > 0 and other connectors with open PrT TSys and a weight = 0. So far, these zones were not distributed proportionally and connectors with a weight = 0 were charged anyhow. (**4336**)
  - VISUM sometimes produced erroneous PrT assignments when exceeding the maximum number of "route trees" which also led to non-readable version files. This mainly occurred during MPA calculations and when processing a large number of iterations. The error no longer occurs. (**4341**)

Network Editor

- MULTISELECT mode - *Formula* tag - *Formula* button*: When converting *Double* values into *LongLength* values, VISUM does not cut off decimal places anymore. (**4345**)

Listings

- *PuT OD pairs*: In mode *Flow bundle paths,* the attributes displayed in the list are now correctly based on just those paths filtered by the flow bundle and no longer on all paths. (**4358**)

Import Interfaces

- *EMME/2 Import:* The program now also presets run times of PuT lines correctly when using the run time of a PrT TSys as data source for a TTF (Travel Time Function). (**4340**)

Add-Ons

- *Background - Edit scale*: The input field for adjustments of the background scale now requires either metric or imperial length specifications depending on the global units system. (**4320**)

9.34-00	Corrections, Bug fixes and Extended Functionality (ID)	Dec. 9, 2005

Discarded Program Crashes

- *Edit line route*: VISUM no longer crashes when accessing the user-defined attributes' tags, if a line route does not have any time profiles. (**4321**)

- *Splitting a link* between two undirected link stop points which are traversed by line routes no longer causes a crash. (**4328**)

- *Aggregating lines*: The program does not crash anymore when selecting option *generated name* for new line routes/ time profiles. (**4326**)

Procedures

- *PrT assignment:*
  - *Stochastic assignment*:
    VISUM now also considers *t0* in addition to *Imp** for the preselection of the stochastic assignment. (**4283**)
    The calculation of the correction factor for the independence contained errors in the past which sometimes led to an incorrect distribution of the routes. The calculation has been corrected. (**4315**)
  - *Blocking back*: The blocking back model for PrT assignments (Stochastic, TributLearn or Incremental) now also affects Traffix (when activating *Blocking back calculation also during assignment*). (**4319**)
- *PuT assignment - Transfer waiting time at stops/stop points*: VISUM no longer assigns an additional factor of 10^n to the total transfer waiting time calculated during assignment (with n = the set number of decimal places). (**4335**)

Network Editor

- *System route – Create opposite direction*: VISUM now also copies the basic data of the original direction when creating an opposite direction. (**4245**)

- Menu NETWORK – PUT VALID DAYS: Templates that are used to *Apply/Delete* days operate correctly now. They sometimes did not apply to the selected valid day but the entry in the list just above it. (**4325**)

- *Aggregating lines*: Time profiles can now also be aggregated, if attributes *Alight/Board* differ at the last item. (**4327**)

Network Graphics

- The positioning of columns and tables at directed point objects has been improved. (**4309**)

Attribute Interface

- For several string attributes (e.g. the *code* of nodes), the number of characters is no longer limited. (**4124**)

Timetable Editor

- *Column selection*: Attribute *Length* no longer occurs twice in the column selection of the lower right section of the timetable tableau. (**4132**)

- *Postlength*: The timetable tableau no longer displays a positive length at the last item of a shortened vehicle journey. Since this is where the vehicle journey ends, the length to the next item equals zero. (**4174**)

COM Interface

- The program now also grants write access to function *AttValue* for the COM objects BlockVersion, Block and BlockItem where it used to be read-only. (**4268**)

Listings

- *Column selection dialog box*: Under *Format*, VISUM now correctly memorizes setting *Percent* when exiting the dialog. (**4220**)

Import Interfaces

- *Shape files*: When reading in polylines as POIs, VISUM now also creates correct objects if a line does not have any intermediate points. (**4306**)

Miscellaneous

- Menu GRAPHIC – FLOW BUNDLE (PUT): The demand segment selection now also takes effect with terms of the type *active links* and active *time profiles*. (**4330**)

9.33-05	Corrections, Bug fixes and Extended Functionality (ID)	Nov. 29, 2005

Discarded Program Crashes

- CALCULATE – PROCEDURES – *Timetable-based assignment – Parameters* button - *Skim matrices* tag: VISUM no longer crashes, if *Open* is checked for an indicator yet no file name has been entered under *Output file*. (**4266**)
- *Matrix Editor*: The program does not crash anymore when calculating the Gravity model. (**4237**)
- VISUM no longer crashes when importing a version file which contains PuT isochrone data. Crashes occurred in some specific networks. (**4287**)

Procedures

- *PrT assignment:*
  - *Dynamic stochastic assignment*: The program now includes the TSys-specific maximum speed per link type. (**4247**)
  - *Equilibrium assignment:* VISUM now correctly evaluates *relative Gap* as termination criterion, if *TargetEquiFunc > HypoShortPathVehHourImp*. (**4242**)
- *PuT assignment:*
  - *TSys-based*: Editing the TSys set of a link now automatically leads to a rebuild of the search graph. This ensures a search on all currently valid links with each new assignment. (**4243**)
  - *Headway-based:* A storage overflow occasionally occurred in larger networks if a value deviating from default (1) had been entered as a factor for "maximum share" in the search parameters. The error has been fixed. (**4305**)
- CALCULATE – PROCEDURES *Functions* tag – *Volume-delay functions*: The upper limit for parameter *f* in the formula for the sigmoidal VR functions has been raised to 100. (**4246**)

Network Graphics

- *Desire line*: The display is now automatically updated when editing the matrix taken as a basis. (**4247**)
- *Bar labels*: Values smaller than 0.01 can now also be entered under *Multiply by*. (**4290**)

Timetable Editor

- *Headway input*: In the timetable editor also, entries without units are now interpreted according to the global setting (seconds/minutes) and no longer automatically in seconds. (**4233**)

Matrix Editor

- The internal traffic of zones is now always included in the split matrix, even if the split matrix is to have less zones than the input matrix. (**4291**)

COM Interface

- *AttValue*: For *Mode* and *DSeg*, this COM command can also be used in WRITE mode now. In previous versions, only READ access could be used. (**2545**)

Listings

- *PuT path legs*: VISUM now issues only one error message when trying to export a list into a database (which in general is not possible) and no longer one per column. (**4294**)

Add-Ons

- EXTRAS - TIMETABLE NETWORK GRAPH – OPTIMIZE…: The functionality no longer produces unnecessary twists when locating the access points. (**4039**)

Miscellaneous

- *Co-ordinate system:* If a co-ordinate system is set, VISUM now correctly displays the selection when opening the network parameter dialog box anew. (**4294**)
- External to VISUM: The provided NAVTEQ tiles now contain PuT direction and TSys names in English. (**4194**)

9.33-04	Corrections, Bug fixes and Extended Functionality (ID)	Nov. 14, 2005

Discarded Program Crashes

- Reading a demand file (dmd) additionally to a network which includes zone type time series no longer results in a crash. (**4191**)

- *Constructing a difference network*: The program no longer crashes, if the codes of *TSys* or *DSeg* include character "-". (**4190**)

- Reading shape files which include Hex 0 in the DBF file does not lead to a crash anymore. (**4211**)

- VISUM no longer crashes when repeatedly resuming an assignment on existing connections. (**4131**)

Other Procedures

- ASSIGNMENT ANALYSIS: Attribute GEH is now calculated correctly by the assignment analysis. (**4195**)

Network Editor

- MULTISELECT EDIT -*Intersect*: When intersecting POIs and GIS objects, VISUM now only regards the objects of the selected category. (**4198**)

- DELETE NODES without *Undo*: Option "Clear Undo stack to save RAM" is now also available in the MULTISELECT mode. This guarantees a successful completion of the operation even in large networks without exceeding the storage capacity. (**4141**)

- SINGLESELECT – EDIT LINE ROUTE(S) –*Profiles* tag - *Enter times* button: Allocating dwell times to time profiles based on the default stop point time works accurately again. (**4205**)

Network Graphics

- Printing with the Adobe 7.0 PDF Writer works perfectly again under Window 2000. Sizes and positions of bar labels are now correct. (**4172**)

- *Link bars:* When determining at what links to draw bars, the program now follows the same logic as for the link display. A blocked outward direction especially does not obstruct drawing the reverse direction anymore. (**4212**)

Attribute Interface

- *Paste attributes from clipboard*: Attribute *Board* is no longer necessarily required at time profile items. (**4221**)

Timetable Editor

- *Edit vehicle journeys*: A simultaneous manual editing of the *Service pattern trip no.* is now also possible when displaying the *Regular services*. (**3845**)

COM Interface

- The COM script is no longer cancelled, if references exist to network objects when reading the network additionally. (**4207**)

Matrix Editor

- Splitting matrices now also works, if the split matrix is supposed to have fewer zones than the input matrix. (**4224**)

Listings

- *Read layout*: Columns are no longer created with a width of zero when reading older layouts. (**4210**)

Add-Ons

- *TRAFFIX*: If the green time of a signal group exceeds the end of the cycle time, VISUM no longer transmits *Permitted* but *Permitted+Protected* to TRAFFIX when it is *Permitted+Protected.* This did not occur in the case of NEMA for which the property is specified directly. (**4203**)

Miscellaneous

- *Filter toolbar icons*: Filter icons are now also displayed in red if add-on module PuT is switched off. (**4218**)

9.33-03	Corrections, Bug fixes and Extended Functionality (ID)	Oct. 28, 2005

Discarded Program Crashes

- *List of block items*: Running a new line block calculation in an open list window no longer leads to a crash when subsequently selecting a different block via button ?. (**4176**)

- Calculating the static stochastic assignment with the blocking-back model during assignment no longer leads to an infinite loop. (**4183**)

Procedures

- *PrT assignment:*
  - *Stochastic/Equilibrium assignment*: When reading an existing assignment from a version file and calculating another assignment with option "Use current assignment result as initial solution", the network volume now always equals the route volume. (**4171**)
  - *Functions* tag – *Impedance –Function* button: The program no longer uses the turn factor instead of the connector factor for the impedance and integral of the connector impedance. (**4170**)
- *PuT assignment*: *Headway-based assignment – Parameters* button – *Skim matrices* tag: If a skim matrix is calculated directly in RAM, VISUM no longer saves a transposed matrix to the output file. (**4182**)

Other Procedures

- ASSIGNMENT ANALYSIS: Attribute GEH is now calculated correctly. (**4166**)
- CALCULATE – CALCULATION STATUS: Selecting a demand segment in the PrT path list via the drop-down menu does not change the status of non-assigned demand segments to assigned (*Incremental*) any more. (**4145**)

Network Editor

- *Edit shape of line route*: Previously added extensions are no longer reset when lengthening an existing line route, if certain parameters prevent the creation of an additional section. (**4173**)
- *Multiselect edit:* When selecting an attribute (e.g. *AddVal1*) with a mouse click and then selecting a different attribute (e.g. *AddVal2*) using the keyboard, all changes now affect the attribute selected last (*AddVal2*) and not the one selected by mouse click. (**4168**)
- *Junction Editor – generation of geometry:*
  - Connectors between node-internal links and free links now have 2 instead of 3 intermediate points. (**4186**)
  - In the case of signal-controlled nodes, priority rules are now generated yield-controlled and not uncontrolled for non-signalized turns. (**4187**)
  - Access points for connectors have been shifted from 0.5m before the end of the link to 0.1m before the end of the link. (**4188**)

Network Graphics

- Left-hand traffic U-turns are now displayed correctly. (**4120**)

Timetable Editor

- The line routes selected in the network window are now correctly selected in the timetable editor, too. (**4189**)
- In the *Graphical timetable,* labels are no longer issued twice, if a dwell time at a stop point exceeds 0. (**4162**)
- The height of headers cannot be adjusted any more since columns did not match if headers differed in height. (**4161**)

COM Interface

- *Aggregate/Split*: Warning message "Matrix does not contain zone no." is no longer issued in the COM mode. (**4051**)
- *Reading a matrix*: Error and warning messages are not issued, if the function is called up via COM. (**4097**)
- *Listings*: Exporting numbers with decimal places via *SaveToArray* now works as expected. Depending on the global decimal separator settings, the program sometimes ignored the full stop (.) which led to an increase of the numerical value by a factor of 10^n. (**4175**)

Import Interfaces

- EMME/2: The checkboxes on tags *Units* and *Links* of the EMME/2 import dialog box are no longer reset when selecting a new file on tag *Files*. (**4119**)

Add-Ons

- *Subnetwork Generator*: Decimal places of real-valued attributes are no longer lost when creating a subnetwork. (**4152**)
- *TFlowFuzzy*: The calculation now always returns correct results, if option "Adjust only active OD pairs" is checked. (**4148**)
- *Timetable Network Graph:*
  - The snap radius for selecting access points of time profile lines has been enlarged. (**4076**)
  - Functionality *Optimize* has been improved and does not produce unnecessary turns any more. (**4080**)

Miscellaneous

- *Reading networks*:
  - When reading links additionally with option "Conflict avoidance", VISUM now uses the highest existing number by default, and not twice its value, as before. (**4149**)
  - The additional reading of zones to large networks has been accelerated. (**4177**)
- EXTRAS – NETWORK PARAMETERS – *Scale*: If a coordinate system cannot be converted, VISUM now always uses the former coordinate system after issuing a corresponding warning message. (**4176**)

9.33-02	Corrections, Bug fixes and Extended Functionality (ID)	Oct. 17, 2005

Procedures

- *Tribut*: Modified parameters in the "Matrix-specific distribution function of the Value of Time" grid are now stored correctly when OK is hit. (**4125**)

Other Procedures

- *Go to operation*: Even if the iteration is terminated because the max. number of iterations has been reached or the convergence criterion has been fulfilled, now both values, *maximum deviation* and *deviations total* are recorded to trace file. (**4042**)
- *PuT-Isochrones*: The amount of computer memory required for calculating PuT-Isochrones has been reduced. The more links permitted for *PuTWalk* TSys in the network, the stronger the impact of the modification. (**4143**)

Network Editor

- SINGLESELECT - *Copy Line route:* In the parameter dialog box, the current setting of the option "Copy also all vehicle journeys" is now stored. (**4104**)
- MULTISELECT - *Aggregate Line routes:* Invalid time profiles were sometimes generated in the case of loop or circle lines providing multiple options for the aggregation of a pair of line routes. This bug was fixed. (**4032**)
- *Line routes – Create opposite direction*: In the context of link stop points, the creation of a line route's opposite direction sometimes failed: the operation resulted in an inconsistent (empty) time profile. This bug is now fixed. (**4129**)
- MULTISELECT – *Edit Line routes – Set times for Time profiles :* The multi-selection operation "set times" for time profiles now correctly considers the "only active" flag. (**4142**)
- *Delete vehicle journeys*: Multi-deleting all (or all active) vehicle journeys no longer fails if *coupled* journeys are affected. (**4146**)

Attribute Interface

- Attribute *Node.Code*: Now, the node attribute "Code" may also begin with 0..9 - like any other string-type attribute. (**2564**)
- *Analysis period and analysis intervals*: The attribute interface for analysis period and analysis time intervals has been extended in such a way that time of day and day index can be read or written separately for both begin and end time. Older XML files remain readable. (**4140**)

Timetable Editor

- EDIT menu - LOAD TIMETABLE GRAPHICS PARAMETER FILE:
  - The display of axis labels is now updated immediately after reading data from GPT file. (**4130**)
  - A clear error message is now returned, if the GPT file has been created with a VISUM installation having a higher version no. than the current VISUM installation. (**4102**)

Matrix Editor

- *Territory-related projection*: In code files, also zone indices not being listed in the matrix are accepted as interval limits now. (**4112**)

Import Interface

- DATABASE: If the network file does not contain a Valid Day "daily" having No. 1, this Valid Day is generated automatically now. Please note that not the name is decisive, but the number and the completely set day vector. (**4110**)
- EMME/2: If the EMME/2 file contains the command "a=" for links, automatically both link directions will be created with identical attribute values. (**4115**)

Miscellaneous

- *Classified display* (Network / Timetable Editor): Since version 933001, manual adding/removing of classes had caused a faulty display of rows in the classification grid. This bug could be fixed. (**4126**)
- Now, the *Preview* icon in the vertical symbol bar is reset to the OFF state automatically when the Preview display mode is left by loading another network version. (**4128**)

9.33-01	Corrections, Bug fixes and Extended Functionality (ID)	Oct. 7, 2005

Network Editor

- The message "Open closed window!" which used to be displayed in rare cases will no longer occur. (**3689**)

Network Graphics

- *Text alignment of tables* : These parameter settings are now read correctly from GPA and VER files. (**4098**)
- *Bar width:* Even if option "Use minimum width" is checked, attribute value = 0 will no longer produce bars. All values different from zero will produce at least a very thin bar, whereas value = 0 will not. (**4092**)
- *Classified Display* (Network / Timetable Editor): Even in case of string-type classification attributes (e.g. *Name*), correct tool tips appear now. (**4070**)

COM Interface

- *MS-SQL Database Export*: Also via COM, the new option *"Create primary keys"* can now be unchecked. In previous versions, primary keys always used to be set. (**4094**)

Import Interface

- *TModel Import:* Now, all Node_VDFs are assigned to the correct node type(s). (**4084**)

Add-Ons

- *Timetable Editor - Timetable graphics parameters:* Now, bar labels are aligned directly to the time-distance diagram, if the *Bar layer* is unchecked, though the *Bar label layer* is active for *Vehicle journey items bars*. (**4081**)

Miscellaneous

- Online Help VISUM 9.3:
  English version provided for download via http://www.english.ptv.de/cgi-bin/traffic/visum_download.pl
- *Open network file:*
  - Line route courses consisting of only a single item (thus not having a real course) will no longer be read from file. A warning will be displayed instead. (**4095**)
  - The error message "Detour factor exceeds the limit" will no longer be displayed during line route completion via ⊙ *Shortest path search* in case of two stop points being located on the same link. (**4096**)

9.33-00	Corrections, Bug fixes and Extended Functionality (ID)	Sept. 30, 2005

Discarded Program Crashes

- *EWS*:
  - Exiting VISUM or loading a new network (e.g. via Read version, New network, Read network) while the EWS window is active no longer causes a crash. (**4062**)
  - VISUM no longer crashes after command EWS - OPEN. (**4058**)

Procedures

- *PuT assignment:*
  - If the global calendar period is modified, VISUM now dismisses all PuT assignment results because the modification renders all time references (relative to the start of the calendar period) of the stored paths invalid. (**4033**)
  - In *timetable-based* assignments with PuTAux-TSys, the link fare points defined for those TSys are now considered correctly, both for the TSys impedance in the context of the search and for the fare in the context of the impedance calculation of the final path choice. In the case of those TSys, the program used to assume 0 fare points for each link. (**4068**)
  - *Walk times*: So far VISUM did not find walk links if the entry in the stop area transition matrix exceeded the global "maximum walk time", yet at the same time "special walk times" were defined at the same stop that fell below this threshold value. The error has now been corrected, i.e. acceptable transitions in terms of time in this situation are used in this constellation for the generation of PuT connections. (**4063**)

Network Editor

- NETWORK – PUT VALID DAYS – "Valid days" dialog box: The *Delete* button is now only disabled when selecting valid day "daily". By mistake, it used to be disabled also for the valid day selected immediately after "daily". (**4035**)

- Menu NETWORK/DEMAND – TSYS/MODES/DSEGS – tag *Demand segments*: In the DSeg table, the last of a number of DSegs can now also be deleted. Errors used to occur when selecting DSegs interactively. (**4043**)

- *Multiselect – Connectors - Generate*: 1. The standard length of the generated connectors now always equals the direct distance – even when using a network scale different from 1. 2. The snap radius entry field now also accepts values with units, e.g. "1 km" or "2 mi". All entries were interpreted as meters so far. (**4065**)

- *Connecting links*: Line routes are now adjusted correctly, if a node with two legs and a stop point is deleted in mode "Connect links" and there are two or more undirected stop points on the link preceding the node. So far, zigzag courses resulted from this situation. (**4085**)

Network Graphics

- *Charts*: Negative values are now treated like zeros when drawing pie charts. They thus have no influence on the size of a pie area, nor are they displayed as separate segments. The performance is identical to VISUM 8. (**4044**)

- *Bar display:*
  - The display of very thin bars has been improved. Up to now, link bars were sometimes not drawn even though their width could have been displayed by one pixel still. However, attribute values which lead to an imaginary width of less than half a pixel are still represented by a blank bar. This unintended effect can be avoided by defining a colour classification for the actual link display. (**4040**)
  - Users can now choose not to display very thin bars that cannot be displayed adequately with their own values or to display them applying the minimum width. (**4059**)

- *Link sequence from shortest path search*: The selection of a link sequence via a shortest path search now only activates the links in the selected direction and no longer the opposite direction in addition. (**4066**)

Attribute Interface

- *New attribute:* The *Vehicle journeys* list has been supplemented with a new (calculated) attribute, *Arrival,* which is issued by default. (**4036**)

- *Paste attributes from clipboard*: Reading in user-defined attributes from the clipboard now also works properly if the data are saved to a different target by manually selecting a different attribute. (**4038**)

- *Temporary attributes:* Temporary attributes are issued correctly again in dialog box "Edit turns". (**4056**)

Timetable Editor

- In the *Graphical timetable*,
  - users can now display several attribute bars at the same time. (**4022**)
  - the departure minute is now displayed again at items with a defined dwell time > 0. (**4053**)
  - *Vehicle journey items bars* are no longer drawn on the dotted lines that indicate sections that are not traversed. (**4069**)

Listings

- *POI and GIS*: In these lists, the enabled "only active" functionality now also operates correctly when switching to another category with the aid of the combo box. (**4037**)

Export Interfaces

- *Saving to MS-SQL*: The database export to MS-SQL does not work under Windows XP SP2. As a temporary measure to work around this problem, users should refrain from the creation of primary keys. If no primary keys are created, the export succeeds. A fundamental solution is yet to come. (**4054**)

COM Interface

- Different COM classes and access functionalities have been renamed in the context of the new COM interfaces for procedure parameters. Necessary adjustments may thus have to be made in scripts that already make use of the new method. For details, please refer to file *Attribute.xls.* (**4050**)

Add-Ons

- *Timetable Network Graph*: A new parameter enables users to label lines midway between two nodes. (**4021**)

- FILE – PROJECT DIRECTORIES: Users can now adjust project directory settings for TRAFFIX files. The project directory settings for NEMA files were used so far. (**4028**)

Miscellaneous

- *Panning:* Moving the mouse while pressing the mouse wheel down activates the convenient hand mode. (**4009**)

- *Undo/Redo:* The buttons are now only enabled in the symbol bar, if respective operations are feasible at the time. (**2786**)

- EXTRAS – OPTIONS:
    - Even if the size of the UNDO stack is set to 1, button *Apply* in the graphic parameters dialog box can now be used several times in a row without causing any problems. (**4067**)
    - The automatic debugging of surface data structures is optional from now on; tag *Miscellaneous* has been added for this purpose. On this tag, the debugging process can also be activated at the push of a button. The new option is disabled by default. This makes sense in particular if the IDs of points and edges is requested when saving and re-loading networks. (**4086**)

- *Reading networks*: Line route courses between two undirected link stop points on the same link do not trigger the inappropriate error message "Detour factor exceeds the limit" any more. (**4087**)

9.32-01	Corrections, Bug fixes and Extended Functionality (ID)	Sept. 15, 2005

Discarded Program Crashes

- SYSTEM ROUTE dialog box, tag *Vehicle combinations*: VISUM no longer crashes when a user tries to insert a system route run time yet no matching vehicle combination has been defined for the transport system in the network. (**3999**)

- *Splitting links*: When splitting a link with undirected link stop points, line routes traversing these stop points are now adjusted correctly. Editing objects produced in this process could lead to a crash in the past. (**3170**)

- *Listings*: VISUM no longer crashes when sorting a list with no values by column. (**4016**)

- *Reading networks*: VISUM does not crash anymore, if attribute *ToTProfItemIndex* in table COORDGRPITEM contains an invalid value (i.e. too high). (**4017**)

Procedures

- *PuT assignments - Timetable-based assignment*: Errors no longer occur during the path search when setting an annual calendar and assigning on days that take place more than 20 days past the beginning of the calendar period. (**4019**)

Other Procedures

- *Save matrix from route volumes:* Filtered volumes are now also calculated right after reading the version if an assignment has been calculated and an OD pair filter is set. (**3996**)

- *Calculation status of CostKm during LLE*: Attribute *CostKm* of objects of the line hierarchy is now also displayed in lists etc., if only the performance and not the infrastructure costs have been calculated with procedure "PuT-Operating Indicators" (**4006**)

- *Save matrix*: The entered file name now only appears in dialog box *Skim matrices,* if the matrix was saved successfully. (**4001**)

Network Editor

- *Messages during intersect calculations:* Messages concerning POIs now always show the correct key. Also, after the first warning on invalid polygons, a new button can now be used to block further warnings. (**4000**)

- *Deleting a node:* Traversing line routes now continue to exist when deleting a two-leg node with adjacent undirected link stop points. (**3998**)

- *Edit line route* dialog box – *Coupling* tag: Coupling time profiles with deviating run and dwell times no longer leads to the deletion of correct vehicle journeys. This has occurred in this past, even without prior warning. (**3997**)

Network Graphics

- *Marking a line in the network display:* has been accelerated. The functionality used to be too slow if a lot of line routes were assigned to a line. (**4007**)

Attribute Interface

- The codes of TSys, Mode, and DSeg may contain minus signs (hyphens) again. (**4010**)

- *PuT path legs listing* – Relation *Time Profile*: A new relation, Time Profile, has been added to list PuT path legs. Therefore, all attributes of the used time profiles can be displayed here for all PuT line path legs. It can e.g. be used to display the headway per path leg after calculating a headway-based assignment. (**4014**)

Listings

- *Layout from standard directory:* Reading list layouts from the file set under FILE-PROJECT DIRECTORIES now also works correctly if the path entry does not end in "\". (**4013**)
- *Tool tips for list headers*: Tool tips now display attribute names that do not fit the header of a column. (**3103**)

Import Interfaces

- *EMME/2 Import*: VISUM no longer cancels the import, if key word *init* is missing in any of the EMME/2 files. (**4023**)

Add-on modules

- *SVG export*: The text alignment in legends is now always exported correctly. (**3980**)
- *LLE*:
  - VISUM now issues more warning messages in large networks and offers possibilities to cancel calculations of indicators by territory. (**4026**)
  - *Access to PuT connections*: Modifying the analysis period or reading PuT connections additionally can lead to invalid data. VISUM now issues a message stating that the assignment results do not match the currently set analysis period and terminates the calculation. In addition, an entry is written in the error.txt file. (**4024**)

Miscellaneous

- The status of button *Preview* in the toolbar is now visible: on/off. (**3964**)
- *Update Setup*: The "Repair Installation" of the VISUM Setup is no longer available. It did not work properly in conjunction with the new Update Setup. The Update Setup can be used to complement a VISUM installation. (**3600**)
- *Reading networks additionally:*
  - The recurring display of message "Permit at least one turn for line-transport system" can now be blocked with button "Yes, all". (**3855**)
  - *UserAttDef*: All properties of user-defined attributes (e.g. the value range) can now be subsequently edited by reading networks additionally in modes "Overwrite object/ attribute". (**4008**)

9.32-00	Corrections, Bug fixes and Extended Functionality (ID)	Sept. 05, 2005

Discarded Program Crashes

- CALCULATE - PROCEDURES – *Operations* tag: VISUM no longer accepts an empty selection in the box used to select **one** demand segment or transport system (e.g. Calculate skim matrix, PuT interlining matrix) which sometimes caused a crash in the past. (**3970**)
- TIMETABLE EDITOR – READ LAYOUT: VISUM does not crash anymore when reading a layout file,
  - if the saved and the calculated stop point/ stop sequence differ OR
  - if the stop point/ stop sequence saved in the layout is shorter than the calculated one. (**3976**)
- *Definition of user-defined attributes:* Subsequent editing of the value range no longer leads to a crash. (**3971**)
- *Procedure Init LOS matrix*: Crashes do not occur anymore when exporting zones in the course of "Calculate LOS Matrix" during procedure "Calculate skim matrix". (**1230a**)
- CALCULATE - PROCEDURES –*Functions* tag– *PrT-Functions:* VISUM no longer crashes when displaying some of the tables in this dialog (the problem just occurred under <u>Windows NT</u>).(**3979**)

Procedures

- CALCULATE – PROCEDURES – *Functions* tag – *Volume-delay functions*: The following functions have been modified/ added:
  - New function type *Akcelic*: This new function type describes waiting times at nodes (turns). The function looks like this:

$$t_{akt} = t_0 + 0.25 \cdot a \cdot ((sat-1) + \sqrt{(sat-1)^2 + \frac{8 \cdot b \cdot sat}{d \cdot a}})$$

    a corresponds to the time period in hours
    b family parameter
    d is the capacity of one lane per hour. (**2674**)

  - New function type *SigMoidal_MMF2:* In this multiplicative version of the *SigMoidal* function, the waiting time term is not added to but multiplied with t0, thus "t0 *" instead of "t0 +":

$$t_{akt} = t_0 \cdot \frac{a \cdot b + d \cdot sat^f}{b + sat^f}$$

  - Enhancement of function type *Logistic*: Function

$$t_{akt} = t_0 + \frac{a}{1 + e^{(b - d \cdot sat)}}$$ has been supplemented with a factor f: $t_{akt} = t_0 + \frac{a}{1 + f \cdot e^{(b - d \cdot sat)}}$ (**3670**)

- CALCULATE – PROCEDURES – *Functions* tag– *Volume-delay functions*: A formula is now also displayed in the parameter dialog box of function type *Linear bottle-neck*. (**3332**)
- *Init LOS matrix*: By mistake, the parameters set in this dialog were not used internally. Instead, the defaults were used for the calculation. The error has been fixed. (**1230b**)

  - *PuT assignment:* A new parameter has been created for the headway-based assignment which is used to dismiss the set of paths.

Search			
Ignore paths, if share	<	0.001	
and	<=	1	* maximum share

    The new setting is mainly used to enforce the assignment of the complete OD demand of a relation even if **all** found paths gain shares that lie below the entered threshold value. (**3504**)

  - *Timetable-based assignment* – *Search* tag, *Dominance* button: VISUM no longer dismisses valid connections when working with advanced *Dominance* parameters and using a factor > 1, if two connections are exactly identical in their temporal position and the number of transfers but show deviant search impedances. (**3983**)

  - When several stop points of a stop are served consecutively, passengers now also count as *PassThroughWITHstop* if not the first stop point is served but one of the following ones. (**3973**)

- EXTRAS – OPTIONS – *Files* tag: A new option has been added which suppresses the output of warning messages during procedures. It can be used to avoid unwanted breaks during procedures of some length. (**404**)
- CALCULATE – PROCEDURES – *Operations* tag: After creating a new line for a procedure, clicking buttons *Parameters* or *Selection* no longer affects the line above the newly inserted one. (**3956**)

Other Procedures

- *Flow bundle*: A flow bundle to a destination zone no longer freezes if the selection is reduced to such an extend that the volume of the flow bundle is 0. (**3974**)
- *Difference network*: In the difference network mode, non-calculated (thus non-defined) attributes are now also displayed as blank strings in the graphic display, ASCII-output and lists in order to differentiate them from calculated zeros. In the regular mode, this feature has been available since 9.3. (**3832**)

Network Editor

- *Edit shape of line route*: A warning is now issued if neither the start item nor the end item coincides with a stop point after editing the shape of a line route. (**1235**)
- MULTISELECT-EDIT *Time profile items*: In this mode also, boarding or alighting cannot be prohibited at time profile items at which vehicle journeys or vehicle journey sections start or end. (**3958**)
- *Deleting a line route*: VISUM now issues accurate messages on the vehicle journeys that are deleted together with line routes or time profiles. (**3992**)

Network Graphics

- *Graphic parameters – Class definition grid:* Property *Draw on/off* is now correctly stored when exiting the dialog with the *OK* button. (**3993**)

Attribute Interface

- *Stop point*: Several new attributes are now offered for this network object, e.g. *PassTransfer, PassOrigin, PassDestination,* and *PassThrough.* (**3383**)

Listings

- All lists are now automatically updated after recalculating or initializing an assignment or an LLE. (**2302**)

Import Interfaces

- Menu FILE – OPEN – *Shapefile*: Polygons are now read-in much faster than before. (**3607**)

Export Interfaces

- *Junction Editor*: For the generation of common VISSIM links (clustering), node-internal lanes that lead to nodes are now also grouped without any overlap if links lead to lane groups of different lengths. (**3796**)

Add-On Modules

- *Subnetwork Generator*: VISUM now also issues a warning ("Save version?") after writing a subnetwork if values have been edited since opening the file. The version file saved by the subnetwork generator now also appears in the list of most recently used files in the FILE menu. (**3699**)

- *Background-Module - Legend*:
  - The calculation of the ideal size of the automatically created legend has been improved. The space is now used more efficiently and all components to be displayed are in full view. (**3829**)
  - If option "Draw legend" in table *Layer* of the graphic parameters has been disabled, it will now still be deactivated after writing and reading the version file anew. (**1538**)
  - Ellipses and bends are now displayed correctly when exported to SVG. (**3972**)

- *Timetable Network Graph*: The context now determines the form of the mouse pointer in the timetable network graph window. It is, e.g. displayed as a magnifier when zooming. (**3448**)

- *LineCosting - NumBlocksTimeProp:* The attribute is now also calculated correctly in the line hierarchy if vehicle journey sections exist that end at a time profile item with a dwell time > 0. (**3975**)

Miscellaneous

- *Reading/writing networks*: The values of user-defined attributes on valid days are not lost anymore when reading/ writing network files. (**3935**)

- *Reading XML procedure parameters:*
  - If an error occurs that terminates the reading process, VISUM stores all previously valid parameters. (**3986**)
  - A detailed warning is now issued when a reading error occurs (inclusive of the row number). (**3987**)
  - Reading networks additionally is no longer terminated if the list contains passive procedures. (**3985**)
  - A warning is now issued if numbers occur twice. (**3988**)

- *OD pair filter - Recalculation:* The OD pair filter is n lo longer evaluated anew after each transaction since this could cause long waiting times. Filtered volumes are now only recalculated if the condition of at least one relation has changed or, as before, if volumes are recalculated. (**3890**)

9.31-04	**Corrections, Bug fixes and Extended Functionality (ID)**	**Aug. 25, 2005**

Discarded Program Crashes

- DEMAND – MATRIX CORRECTION – PROJECTION OF ROUTES*:* VISUM no longer crashes when assigning a time series of matrices instead of a matrix to the DSeg to be analyzed. (**3939**)

- GRAPHIC – DESIRE LINE: Setting traffic types for terms of type "Active links" no longer results in a crash. (**3955**)

- *COM Interface:* Executing COM with a single-threaded DLL no longer causes a crash. The problem was based on an MFC error and emerged when copying VARIANT strings. (**3930**)

Procedures

- *PuT Indicator "Utility"*: The indicator now returns the original utility sum of the connections, i.e. the individual terms are no longer standardized according to the utility of the connection with the smallest impedance before the summation. (**3879**)

Other Procedures

- *Skim matrices*:
  - Option "Keep data in storage" can now subsequently be edited in dialog box *Skim matrices*. (**3932**)
  - New skim matrices are now generated with three decimal places by default. (**3931**)
  - The format selected when generating a matrix is now retained when automatically updating skim matrices on file (generally in the course of the 4 stage algorithm). (**59**)

- *Difference network*: Undirected values of links are now displayed correctly again. So far, VISUM issued the values of just one direction instead. (**3948**)

Network Editor

- *Intersect calculation with POIs*: VISUM no longer aborts the calculation when detecting an intersecting polygon during intersect calculations of polygonal network objects. Instead it continues with the next valid object. A warning is issued. (**3945**)

Network Graphics

- GRAPHIC – PARAMETERS –
  - Dialog box *Automatic class definition*: The format of the attribute is now taken into account for the *Minimum value* and *Maximum value* of the value range, e.g. link lengths in miles for imperial units. In the past, VISUM used internal values, e.g. meters for all length attributes. (**3803**)
  - *Classification grid*: The width of the columns that are used to manage the classes is now saved in the registry and thus does not have to be adjusted every time the dialog is opened. (**3836**)

- *Marked links*: Even when a link is selected with CTRL-FromNode-ToNode, it is now displayed according to the graphic parameters set for marked links. (**3926**)

- *Edit shape of links:* In the EDIT SHAPE mode, a link is now displayed in the color adjusted for *marked* links. (**3694**)

- *Turn Volumes*: The size of turn volume bundle texts is no longer accidentally multiplied by factor "text scaling on screen" for the preview display and in print. (**3944**)

- *Marking of line routes*: Arrow heads before stop points are displayed in full again when selecting a line route. (**3923**)

COM Interface

- *ItemByKey*: For several network objects with string keys (e.g. TSys and line), this COM method is no longer case-sensitive. A network object named Abc is now thus also found when searching for abc or ABC. (**3709**)

Add-On Modules

- *Subnetwork generator:*
  - When generating a subnetwork, the program no longer aborts if two nodes refer to the same signal control. (**3906**)
  - All active detectors are exported unless they refer to a count location which is not exported. (**3938**)

- *Background*:
  - *Open background polygons* are always displayed correctly now (and are no longer completed). (**3936**)
  - *Legend:* Pie charts and adjacent texts no longer overlap when displayed in the legend. (**3946**)

- DEMAND – MATRIX CORRECTION - TFLOWFUZZY: The DLLs TFlowFuzzy and ScriptMuuli are now automatically searched for and registered in the Exe folder when starting up VISUM. This way, unintentional combinations of DLLs are avoided in the case of parallel installations. (**3954**)

Export Interface

- *Shape file:* The export no longer produces incorrect files when exporting enums like *NodeControl*. (**3952**)

Miscellaneous

- *Reading networks*: Line blocks, even if they are incomplete and consecutively numbered starting with 1, are now correctly read in from network files. (**3928**)

- EXTRAS – SCREENSHOT: The functionality works correctly again. VISUM produced entirely black images in some instances. (**3951**)

- *Procedure parameters*: The parameters of tag *Volumes* are now available via XML. (**3848**)

9.31-03	Corrections, Bug fixes and Extended Functionality (ID)	Aug. 18, 2005

Discarded Program Crashes

- GRAPHIC – TURN VOLUMES: VISUM no longer crashes when deactivating previously displayed turn volumes (*Flows ON all visible nodes)* with button *Close*. (**3762**)

- *Reading networks additionally*: The memory leak had not been solved correctly and thus sometimes caused a crash when using function "Overwrite object/attribute". The problem has now been solved. (**3917**)

- *Reading networks/ databases additionally*: VISUM no longer crashes when overriding turning standards. (**3920**)

Procedures

- *PrT assignment:* CALCULATE – PROCEDURES – *Functions* tag- *Impedances at node*: A change of settings on this tag is no longer disregarded when switching to tag *Operations* and confirming with *OK* or *Execute*. (**3908**)

Network Editor

- CALCULATE – CHECK NETWORK: *Multi-traversed links*: A further option has been added to this dialog box that identifies links which are traversed by a line route in the same direction more than once. (**3898**)

- *Timetable Network Graph:* Just the vehicle journeys that depart from a transfer node and not those that arrive are now shifted when calling up function *Shift selected vehicle journeys.* (**3889**)

- *Shift node:* Entry "Adjust link length to direct distance" has been replaced by "Adjust link length to new polygon length" since it describes the function more accurately. The function itself remains unchanged. (**3914**)

- MULTISELECT EDIT: VISUM returned incorrect results for imperial target attributes when multiplying or dividing values via button *Formula* since it converted imperial units and metric units twice. (**3916**)

- NETWORK - TSYS/MODES/DSEG: In the *TSys/Modes/DSeg* code, upper case letters can now be changed to lower case letters and vice versa. (**3910**)

Network Graphics

- *Legend*: Objects marked in the network (nodes, links, line routes, ...) are no longer displayed if they are covered by the legend. (**3611**)

- *Editing the shape of links*: VISUM now draws without flaws when intermediate points of links are shifted. (**3918**)

- *Graphic - Parameters – Layer* tag*:* The altered position of layer *Backgrounds (old)* is now always correctly considered when closing the dialog box with *OK*. (**3913**)

- *New Backgrounds:*
  - The shifting mode operates more accurately now. (**3807**)
  - Select background, *Edit* button: The *origin* is now correctly labelled *top left*. (**3810**)
  - *Create* background: The dimensions of loaded graphics are now taken into account. VISUM no longer automatically inserts square graphics. (**3811**)

- *Markings*: The network objects selected as origins of isochrones are now still drawn in *Marking2* when the *Isochrones* dialog box is closed (just like when displaying a *Shortest path search*). (**3704**)

- *Shortest Path Search:* The marking of selected items is no longer lost. Also, VISUM now uses the color set for marked items. (**3697**)

COM Interface

- When calling up COM function CFlowBundle.Save, VISUM now correctly saves a flow bundle matrix instead of an OD matrix (for the demand segment). (**3919**)

Listings

- *Reading column widths in list layout files:* Column widths are now adjusted as specified. (**3912**)

Import Interfaces

- *Shape file import:* Invalid keys for nodes (e.g. negative numbers) are now intercepted during shape file imports. (**3892**)

- *EMME/2 import:*
  - Block ID "t lines" (transit lines) is sometimes not available for an import and therefore optional from now on. (**3893**)
  - If errors occur when reading in lines, VISUM terminates the procedure. An error message is issued and an entry is written in the error file. (**3892**)

Miscellaneous

- The Russian surface is now displayed correctly. (**3895**)

- *Saving a network - LSA:* The information whether several nodes are assigned to the same signal control is no longer lost when saving networks or data bases (table SIGNALCONTROLTONODE). (**3905**)

- *Reading networks additionally*: Option "Overwrite attribute" no longer adds additional attributes to the original network which did not exist before the import. (**3921**)

- *Procedure parameters*: The parameters of tab *PuT functions-Fares* are now available via XML. (**3884**)

9.31-02	Corrections, Bug fixes and Extended Functionality (ID)	Aug. 11, 2005

Discarded Program Crashes

- Menu DEMAND – DEMAND MODEL: In this dialog, activities can be deleted interactively again without leading to a crash. (**3395**)

- *Edit link dialog box*: VISUM no longer crashes when clicking on tab *PrT-Sys* if no PrT-TSys exists. (**3881**)

Procedures

- Menu CALCULATE – PROCEDURES –*Operations* tab:
  - The selection button that was labelled "DSeg/TSys" so far is now dynamically labelled depending on the selected procedure, so that users can identify more easily which kind of object needs to be selected. (**3833**)
  - The procedure parameters dialog box can now also be exited by clicking *OK* when the cursor is positioned in input field "File name". (**3403**)

- *PuT assignment: Timetable-based assignment parameters*: When exporting XML procedure parameters, several real-valued attributes were written without decimal places, which led to a data loss in some cases. The error has been eliminated. (**3822**).

Other Procedures

- Menu GRAPHIC – DESIRE LINE:
  - In dialog box flow bundle, not only can individual items now be deleted with the aid of the new *Delete* button but also by using <Del> on the keyboard. (**3828**)
  - The marking of the selected network objects is now adjusted immediately following the deletion of an item in the dialog. (**3827**)
  - *Line display for link flow bundle*: When defining a PuT flow bundle, the listed PuT line routes/ lines etc. are now restricted to those that actually traverse the selected network object. Editing is thus more comfortable. (**2575**)
  - VISUM now issues a detailed error message when calculating a PuT flow bundle if paths are not saved as connections yet an evaluation on the vehicle journey or operator level is to be made. (**3846**)

- *Time-of-Day Choice*: The parameters for this procedure can now also be read-in successfully if the PAR file refers to demand time series that are not contained in the current network. (**3891**)

Network Editor

- SINGLESELECT LINE ROUTES - *Edit - Copy:* Vehicle journeys are correctly NOT copied again if the corresponding option *Copy also all vehicle journeys* on tab *Profiles* is deactivated. (**3838**)

- DELETING NODES: When picking option *connect links* after deleting a node with two legs, the link capacities are now identified correctly in proportion to the lengths again. (**3710**)

- EDITING STOPS: The cursor now stays in the last row following the deletion of entries on tab *spec. Walk Times*. So far it used to jump to the beginning of the list. (**3663**)

- MULTISELECT NODES DELETE: Connected nodes were not accounted for in groups isolated/ with one link/ with 2 links/ multi-way and could thus not be deleted. The error has been corrected, i.e. users can now make sure that connected nodes are accounted for in the right group regarding the number of legs by activating option *delete also connected nodes*. (**2615**)

- MULTISELECT EDIT: Assigning an attribute (with no units) to another one functions as expected again when choosing option "Sum up values?". In the past, values were overridden instead of added up. (**259**)

Network Graphics

- The display no longer flickers when showing a Shortest Path. (**3830**)

Attribute Interface

- Attribute IDs of user-defined attributes may once again include sign /. (**3847**)

Timetable Editor

- *Line filter (applies to Vehicle journey/Veh. journey section):* The display of active or passive objects is now automatically adjusted in the timetable editor when filter settings are edited. (**3655**)

COM Interface

- *Autozoom*: When using this COM functionality, all network objects that occur in the superior network element container are now considered. This did not use to be the case for the following classes: *Line, LineRoute, TimeProfile, Stop, StopPoint, StopArea, MainZone.* (**3725**)

Listings

- *Attributes-Selection tree:* An attribute can now be selected (and inserted) with a double click even if it had already been selected before. (**3490**)

Import Interfaces

- *EMME/2:*
  - During the import, the EMME/2 attribute that determines the link speed v0-IV is now interpreted in mp/h or km/h according to the setting in the import parameters dialog box, tab *Units*. So far, units were always assumed to be in km/h. (**3844**)
  - *Default attribute values per link type:* Useful link type defaults are now automatically allocated to link attributes like T-PuTTSys during the import. (**3878**)

Add-ons

- *LLE*: Undefined (thus not computed) LLE attributes are now also displayed as blank values after completely initialising the procedure. See also ID 2566 (Attribute Interface), dated Aug. 2, 05. (**3839**)
- *Legend Wizard:*
  - The text font and colour settings now affect all texts of the legend and not just the title. (**3841**)
  - The width of the legend is now automatically adjusted when entering *Additional legend items* (Analyst, Revision). (**3880**)

Miscellaneous

- *Reading networks:* If incorrect vehicle journeys cannot be inserted when reading a network, the respective message in the trace file now also includes the original keys instead of the generated vehicle journey numbers when entering a numerical offset under conflict handling during the import. (**3751**)
- *Reading network files additionally*: Reading vehicle journeys additionally from a network file no longer leads to a memory leak. (**3784**)
- *Procedure parameters - writing XML files*: Writing such files did only work on some computers if the DLL msxml4.dll was registered in the VISUM directory "by hand". This is no longer necessary as of this service pack. (**3837**)
- *Setup*: As of version 9.31xxx, the version number of the VISUM entry under Start – Settings – System control - Software is automatically adjusted for updates, too. (**3599**)

9.31-01	Corrections, Bug fixes and Extended Functionality (ID)	Aug. 4, 2005

Other Procedures

- *PuT Isochrones:* For network objects that could NOT be reached Isochrones-NT value 32767 (= maximum 2 Byte value) is returned now. In previous versions, zero was returned by mistake. The Isochrones-Time value of objects that were not reached is now set to 2147483647s (= maximum 4 Byte value). (**3818**)
- *Difference network*: Calculated attributes are displayed correctly again. (**3820**)

Network Editor

- SINGLESELECT LINE ROUTE*:*
  - *Edit - Copying a line route with its vehicle journeys and vehicle journey sections*: If a target PuT line run by a different TSys is selected, then the VehCombinations not matching the new TSys will be handled correctly. (**3823**)
  - *Create opposite direction:* Via a new button, vehicle journeys and vehicle journey sections can optionally be included, when the opposite direction is created. (**3085**)
- *Input of values with invalid units:* VISUM will no longer need 100% CPU when attributes with units are entered in the *Edit link* dialog. The error message will be displayed immediately in case of incomplete or faulty entries (e.g. mi/ instead of mi/h). (**3804**)

Network Graphics

- *Pie charts*: Now, pie charts are also displayed if the attribute value to be displayed is < 0.5. Now, scaling of both, bars and pies, regards the real attribute value (rounding is ignored). (**3815**)
- *Link Bars - Attribute selection*: Selection of a different attribute will no longer reset other parameter settings in this dialog. (**3800**)
- *Mark line route:*
  - Links traversed multiple times by a line route are now indicated by a thicker line. (**3732**)
  - *Marking lines* has been accelerated. Lines with several line routes will now appear much faster on screen. (**3432**)
- *Screenshots*: JPG files now also contain network objects in the marked state. (**3802**)

Miscellaneous

- FILE - SAVE - *SVG file*: The HTML file saved with the SVG file provides checkboxes for *Enable/Disable Legend headers*. (**3760**)

9.31-00	Corrections, Bug fixes and Extended Functionality (ID)	Aug. 2, 2005

Other Procedures

- Menu GRAPHICS - FLOW BUNDLE: The dialog is resizable now. Furthermore, an additional "and" label indicates the logical connection of user-specified terms more clearly. (**3711**)

Network Editor

- *Tabular lengthening of Line route:* No flashing screen display, since the edited line route will no longer be drawn multiple times during lengthening. (**3788**)
- *Copy line route:*
  - Current "Copy vehicle journeys" checkbox setting is kept now when switching to another line. (**3792**)
  - Line routes and their vehicle journeys are copied correctly now, even if warnings regarding copying vehicle journeys are displayed. (**3794**)

Network Graphics

- *Points of Interest:* The user can now define the size of the arrow head of the line connecting a POI and the allocated network object. (**3633**)

Timetable Editor

- *Tabular Display mode:* Another *Regular services display mode* has been implemented: Based on the editable attribute *ServiceTripPatternNo.*, groups of vehicle journeys are formed. (**2496**)
- *Graphical Display mode:*
  - Now, a vehicle journey items attribute (e.g. volume) can be displayed as bar via graphic parameters similar to those for link bars. At present, only a single bar can be output, several bars will be possible soon. (**2891**)
  - Now, text as well as label format can be specified by the user for labelling the stop point axis. (**2669**)

Listings

- Information on *List icons* is now provided via tool tips. These can be translated into several languages, whereas *Status bar* entries are always displayed in German. Status bar entries will no longer be displayed in lists. (**3801**)

Attribute Interface

- *Attribute value 0:* For output attributes calculated by *assignment* or *line costing* the VISUM display mode now differentiates between
  - undefined attributes not having been calculated yet and thus still having attribute value zero, and
  - defined attributes having attribute value 0 resulting from the calculation procedure.

  Thus the user can immediately recognize whether the zero value has been calculated.
  In lists, in the network graphics and in ASCII files,
  - undefined attributes are displayed by an empty string, whereas for
  - defined attributes with calculated attribute value 0 still 0 is used.

  Note: Internal calculations (e.g. in filters) regard those not yet calculated attributes still as 0; thus in filter settings, still 0 has to be entered as upper or lower value range limit. (**2566**)
- Zone attribute "mean number of transfers" is now returned correctly with decimal places. In previous versions, values were rounded to integers. (**3799**)

COM Interface

- *Directions.ItemByKey*: Now, this COM method regards the entered string as direction code (used to be regarded as name by mistake). This matches the requirements and is also necessary because only the code needs to be unique whereas the name does not have to be unique. (**3797**)

- *Timetable Export*: The complete content of the tabular timetable can be exported as SafeArrays via COM. (**2568**)

- Now also available via COM or XML:
  - Parameters for procedure "Edit attribute". (**3707**)
  - Parameters for analysis time intervals and analysis period: The name of the outer COM class has changed from *AnalysisTimeIntervals* to *AnalysisTimes*. Within this class, access to analysis time intervals is provided now. (**3778**)

Import Interfaces

- *EMME/2*: Empty rows in data files will be ignored. (**3816**)

Export Interfaces

- *VISSIM*: The name "Pedestrians" is translated now for VISSIM Vehicle types/classes. (**3814**)

Miscellaneous

- *Read network file additionally:* Reading vehicle journey items data additionally will no longer require too much RAM. (**3784**)

- *Open link shape file:* Links will no longer be ignored completely because of invalid link type data, but the default value will be used instead. (**3813**)

- *Legend & New backgrounds*: All parameters related to "new" backgrounds are now also saved with graphics parameter files and version files respectively. (**3806**)

- Also *ScriptMuuli.dll* is automatically saved to the registry, when VISUM is installed or updated. (**3791**)

- *Configuration file*: The CFG file entered via command line when the program is started is read correctly now. (**3805**)

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 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*: The 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 missing), 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-independent 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 *Shortest 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 criteria, 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 occurring during difference network calculation (caused by e.g. inconsistent 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 highlighted 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 been 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 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 occurred 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 works 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**)

9.30-01	Corrections, Bug fixes and Extended Functionality (ID)	June 14, 2005

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**)
- Menu FILE - *Export - 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**)