

VISSeed

General Description:

Traffic simulation is an inexpensive means to evaluate and compare possible scenarios of traffic conditions. However, in order to achieve statistically sound results that replicate the stochastic nature of traffic distribution, multiple runs are performed using different random seed numbers. Random seed numbers will affect key software parameters and probabilities used in the simulation model and henceforth produce different results for the same scenario.

VISSeed is a multiple run utility that was developed by ATAC and is used in conjunction with VISSIM to make multiple simulation runs of each scenario with different random seed numbers. VISSeed can generate unique random seeds to be used with each run automatically, but users have the option of supplying their own seed values. VISSeed creates a unique folder for every random seed simulated. Each folder contains the output files selected by the user.

How to use VISSeed:

1. Use the VISSIM Option/Evaluation/Files menu to define the output Measure Of Effectiveness file. Simulate the .inp file once to make sure that the output file is produced successfully in the folder containing the .inp file. If successful, proceed to using VISSeed to perform multiple runs. It is up to the user to activate the animation in VISSIM or it can also be activated by checking the animation box in VISSeed. However, the animation will slow down the simulation.

VISSeed will automatically check the output boxes that have been selected by the user in VISSIM Option/Evaluation/Files menu. VISSeed includes check boxes for the following files:

- Distribution of green/Signal timing log (*.LSA): Contains green and red times for all signal groups(phases) of all controllers
- Signal/detector record (*.LDP): Contains log of signal display changes and detector actuations (to be configured using a *.KFG file)
- Signal changes (*.LSA): Contains all signal changes occurring during a simulation run in chronological order.
- Data collection (*.MES): Contains compiled data collected at previously defined data collection points.
- Data collection (raw) (*.MER): Contains raw data collected at previously defined data collection points.
- Node evaluation (*.KNA): Contains the node evaluation parameters for the node evaluation output file.
- Bus/Tram wait time (*.OVW): Transit stop times (excluding times for passenger interchange).

- Travel Time (*.RSZ): Average travel times during a simulation for previously defined travel time section.
 - Travel time raw (*.RSR): Contains raw travel times during a simulation for previously defined travel time section.
 - Queue length (*.STZ): Average and maximum queue lengths at previously defined queue counters.
 - Delay (*.VLZ): Evaluation of compiled delay data.
 - Delay raw (*.VLR): Evaluation of delay raw data.
 - Convergence (*.CVA): Contains volume and travel tie values for the current run and previous runs.
 - Vehicle Record Output (*.FZP): Contains vehicle information specified for collection by the user in the *.FZK file in the Vehicle Record configuration box.
2. Open VISSeed.
 3. In the VISSIM Executable File field, browse to the folder where vissim.exe is located (usually at C:\Program Files\PTV_Vision\VISSIMxxx\Exe).
 4. In the Network Input File (*.inp) field, browse to the folder where the VISSIM input file is located.
 5. In the Configuration File (*.ini) field, browse to the visim.ini file that is associated with the simulation (usually the same folder where the *.inp file is located).
 6. Select the output files to be collected by checking the box next to each output file that VISSIM is set up to generate.
 7. Choose the output folder, by browsing to the folder where the output data is to be generated. It is recommended that a separate folder be created for each scenario. VISSeed allows the user to create a new folder through the Choose Output Folder interface.
 8. In the Random or Sequential File (*.rdm) field, browse for a seed file or generate a new one by pressing the New button. VISSeed will automatically give a value to the Starting Run Number and Ending Run Number according to the random seed numbers contained in the sequential file. However, the user may redefine how many seeds to include in the multiple simulation runs by redefining the values in those fields. The current simulation number will show the number of the run that is currently being simulated.

Once the simulations have started, the user can stop the simulations at any time by pressing the stop simulation button.