

PTV VISSIM

FIRST STEPS TUTORIAL



Imprint

This documentation is based on PTV Vissim 9.

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Although this documentation was compiled with great care, we cannot guarantee for its correctness. We are thankful for hints on errors or shortcomings.

Scope of This Tutorial

Welcome to the PTV Vissim microsimulation, and thank you for your interest in working with Vissim. For the best experience with our software, please ensure to understand the following information:

- The Intention of this tutorial is to provide a first insight and a quick hands-on experience with Vissim. Hence descriptions are kept to a minimum and the examples provided are of very basic nature. Only a very small portion of the functionality of Vissim is covered here.
- To run professional applications with PTV Vissim microsimulation, both a profound understanding of traffic flow theory and a thorough lecture of the Vissim user manual is essential. In addition, for effective use of Vissim, we strongly recommend to attend a Vissim training course to provide you with a head start for your project as well as to avoid common traps.

After a short familiarization with our user interface we're sure that you'll like the ease of coding traffic networks.

Enjoy, and look forward to your first moving vehicles appearing soon 😊.



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1 Quick Introduction

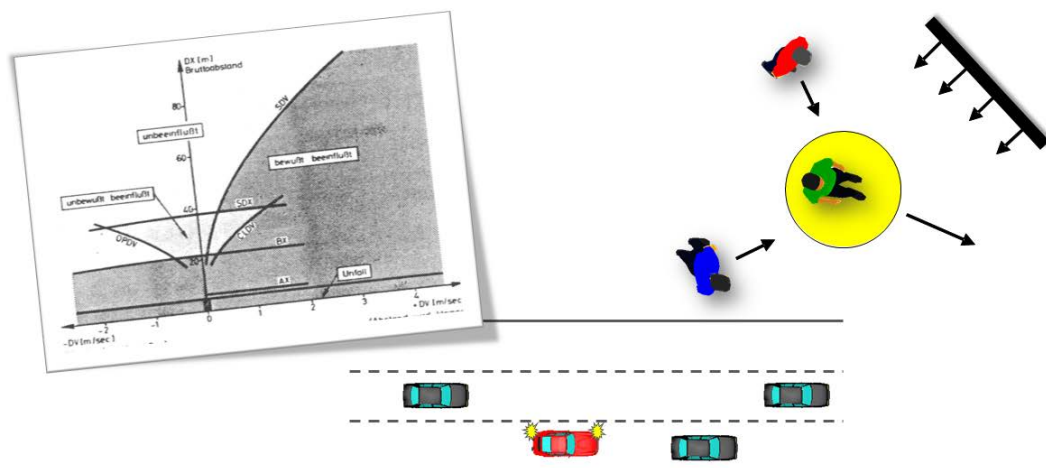
Vissim is a microscopic, time step and behavior based simulation model for realistic modelling of city and interurban traffic plus pedestrian movements. Besides private traffic also rail- and road-based public transport (PT) can be modelled.

The traffic flow is simulated considering lane allocation, vehicle compositions, signal control and detection of private and public transport vehicles.

SINGLE INTERSECTIONS & NETWORKS



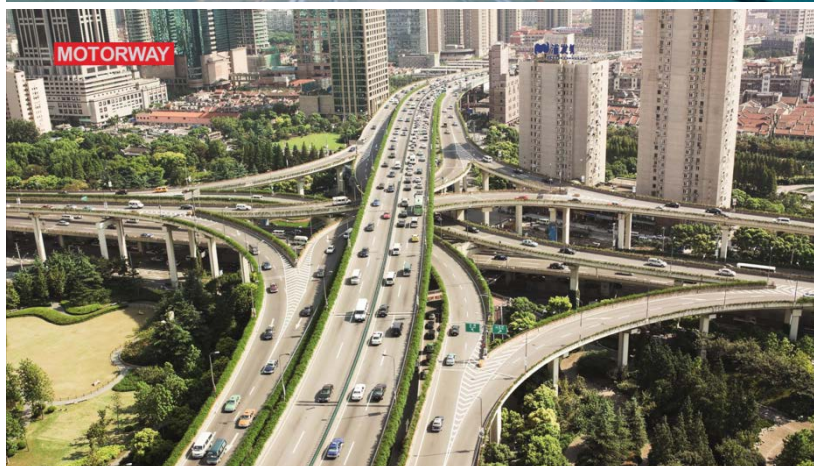
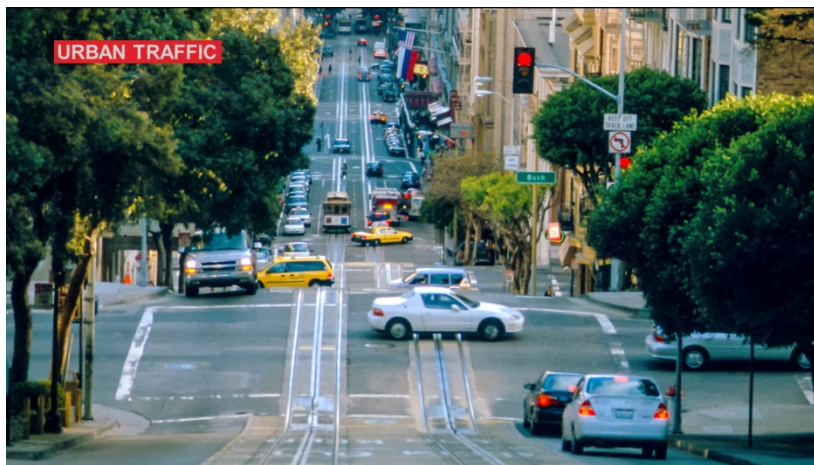
SCIENTIFICALLY APPROVED MODELS

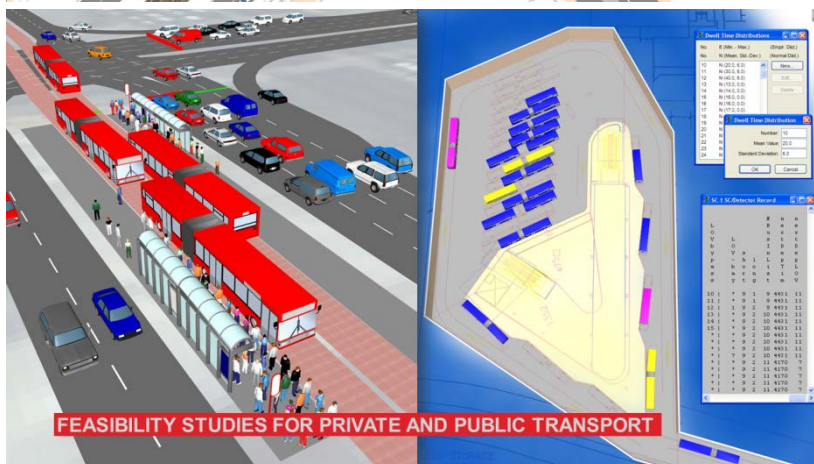
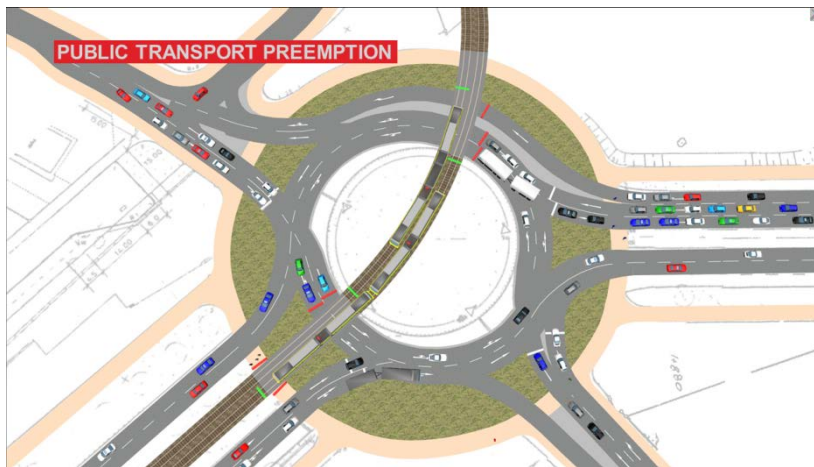


Fields of Application for PTV Vissim

Vissim can be used for answering a vast variety of traffic challenges. The following use cases show a small extract of applications:

- Junction layout comparison (roundabout vs. signal control, multi-modal etc.)
- Transport development planning (road works management, building evacuation etc.)
- Capacity analysis (demand raise, roundabout with pedestrian flows etc.)
- Active traffic management (VMS, temporary use of hard shoulder etc.)
- Public transport simulation (Preemption, railway stations etc.)



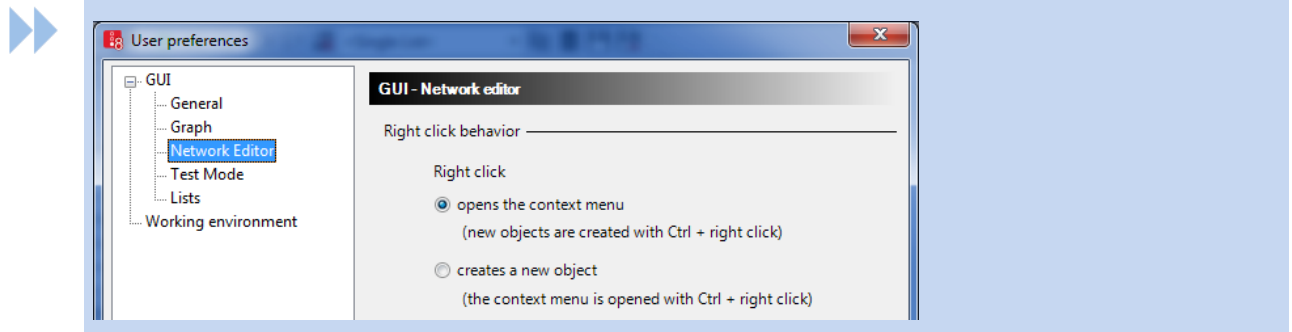




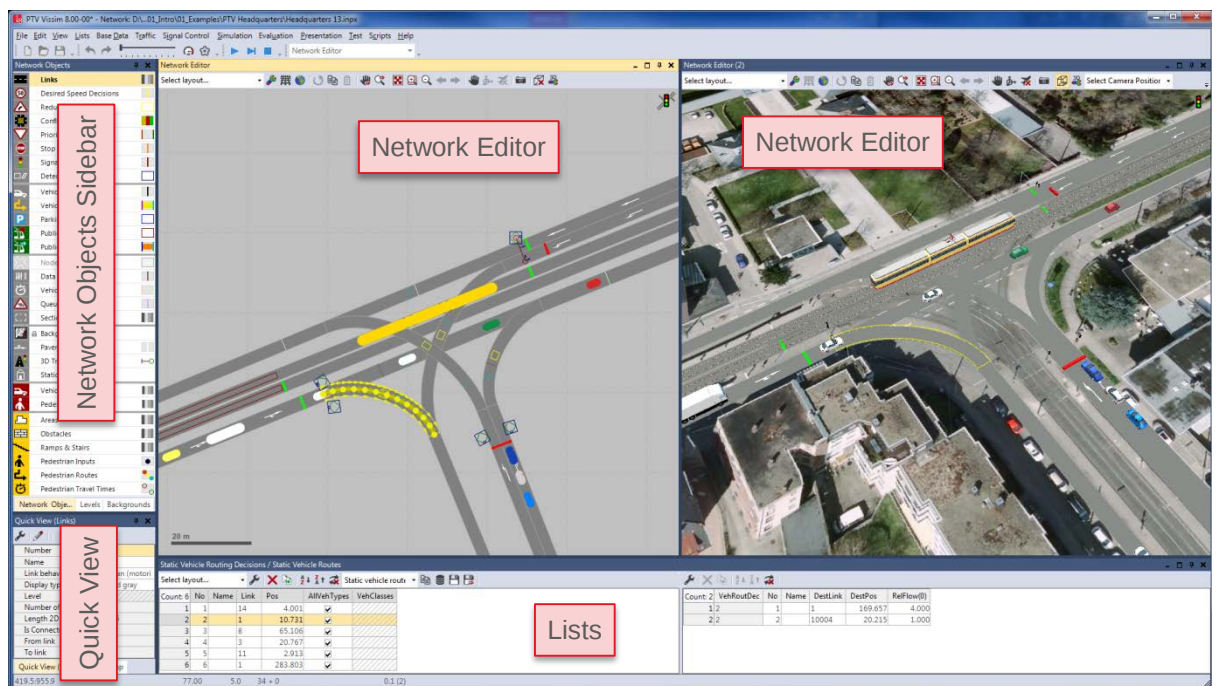
2 Basics of Program Handling

2.1 Right-Click Behavior in Network Editors

When starting Vissim for the first time, a dialog box is prompted to select the desired right-click behavior in Vissim. These settings can also be changed later at any time through **EDIT - USER PREFERENCES... - Network Editor**:



2.2 Graphical User Interface (GUI)



The network editor is used to setup the network. All network objects are accessible through the network object sidebar (details see below). Attributes of a selected network object can be edited in the quick view. Lists are used to edit all data, also for non-graphic network objects such as vehicle types.



Open the following lists:

1. From the **BASE DATA** menu, select **DISPLAY TYPES**.
2. From the **BASE DATA** menu, select **VEHICLE TYPES**.

Windows and lists can be arranged in almost any way inside and outside the main Vissim window.

2.3 Basic Navigation in the Network Editor

Use one of the following commands to move and zoom the network inside the network window. There are mouse and keyboard options available for your convenience:

Action	Mouse	Keyboard	Toolbar
Zoom in/out	Wheel	PgUP, PgDN	
Pan	Press wheel + Drag	← → ↑ ↓ (cursor arrows)	
Rotate (in 3D mode only)	ALT + Press wheel + Drag	I, K, J, L	

2.4 Network Objects Sidebar

The network object sidebar contains a list with all **network object types**. You can call settings and functionality for appearance, visibility and the selection of network objects in a network editor via icons and

the shortcut menu. These settings always refer to the **last active network editor**. If you activate another network editor by mouse click, the current settings for this network editor are shown in the network objects sidebar.



Functionality

Column	Description	Comment
	Visibility	Hides/shows objects of this type
	Selectability	Prevents from accidental editing objects of this type
Areas	Insert mode	Enables creation of new objects and some extended editing
	Label	Shows label as defined in graphic parameters of this type
	Graphic Parameters	Type legend and access to type-specific graphic parameters

2.5 Lists

The attributes of all **network objects** and **base data** are accessible through lists. In addition, for some network object types, dialog boxes are available for single object editing. Furthermore **result attributes** can also be shown in lists.

Display Types											
Select layout...											
Count: 10	No	Name	FillColor	Invisible	TextureFilename	TexHorizLen	Curved	NoMipmap	Shaded	AllSidesSame	Rail
1	1	Road gray	(255, 128, 128, 128)	☐	Gray01.bmp	1.000	☐	☐	☐	☐	☐
2	11	Rail (stones)	(255, 101, 92, 75)	☐	Stones02.bmp	3.333	☒	☐	☐	☐	☒
3	12	Rail (road)	(255, 128, 128, 128)	☐	Gray01.bmp	1.000	☐	☐	☐	☐	☒
4	21	Pedestrian area gray	(255, 128, 128, 128)	☐		1.000	☐	☐	☐	☐	☐
5	22	Obstacle	(255, 128, 0, 0)	☐		1.000	☐	☐	☐	☐	☐
6	31	Escalator steps	(255, 108, 108, 108)	☐	Metal01.jpg	0.500	☒	☒	☒	☐	☐
7	32	Escalator landing	(255, 128, 128, 128)	☐	Metal02.jpg	0.167	☒	☐	☒	☐	☐
8	33	Escalator handrail	(255, 0, 0, 0)	☐		1.000	☐	☐	☒	☒	☐
9	34	Escalator balustrade	(255, 160, 160, 160)	☐		1.000	☐	☐	☒	☒	☐
10	35	Escalator socket	(255, 128, 128, 128)	☐		1.000	☐	☐	☒	☒	☐

Important List Toolbar Buttons

	Command	Description
	Synchronization	Every selection in the list also changes the selection in all network editors, and vice versa.
	Attribute selection	Add, delete, move and configure columns.

Important List Display Properties

	Command	Description
	Irrelevant cell	Values that are currently irrelevant (most times because of a dependency of another attribute).
	Read-only cell	Values that cannot be edited (for example calculated or result attributes)

3 First Steps for Building a Vissim Network

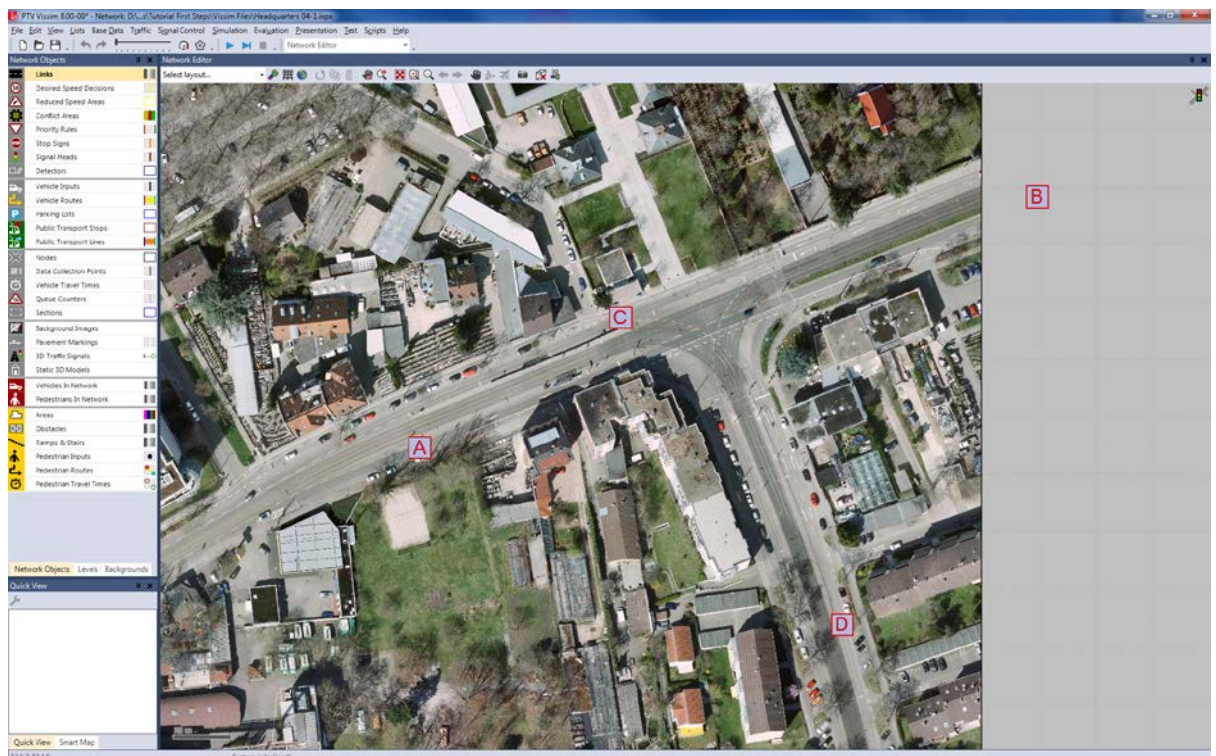
3.1 Backgrounds

Background maps are used to setup the Vissim network to scale. Hence it is important to place and scale background images correctly.



1. From the FILE menu, select OPEN.
2. Go to TUTORIAL FIRST STEPS\VISSIM FILES and select HEADQUARTERS 04-1.INPX.
3. Press OPEN.

This example file already contains a scaled background map.

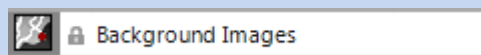


To prevent any background image from accidental editing/moving we strongly recommend disabling the selectability of background images.



Disable selectability of background images:

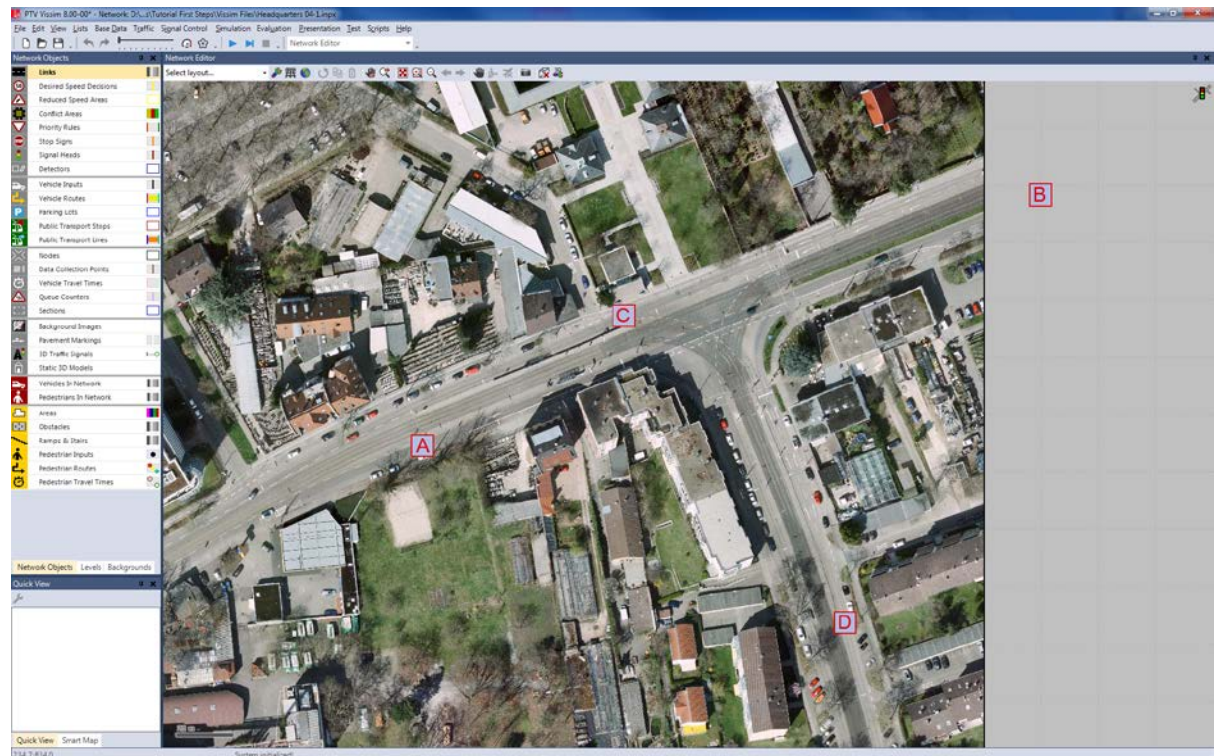
In the network objects sidebar, move the mouse pointer left of *Background Images*. and click on the  lock icon:



3.2 Links & Connectors

Links and connectors are the backbone of the Vissim road network (rather than nodes and edges). This allows virtually any kind of junction and road layout.

In this tutorial, we model the private traffic of the main T-junction shown on the background.



3.2.1 Links



1. Select the  Links insert mode from the network objects sidebar.
2. Add a new link: Press Ctrl + right-click and drag the mouse from **A** to **B** while holding down the right button.

The new link is drawn in driving direction:



3. Confirm the upcoming dialog box **Link** with Ok.
4. Right-click inside the link.
5. Select **GENERATE OPPOSITE DIRECTION** from the context menu.
6. When prompted, select 1 for number of lanes and confirm with Ok.



Another link is generated next to the first one but with opposite driving direction:



7. Double click inside the second link (link 2) to edit the link data:

Link

No.: 2 Name:

Num. of lanes: 1 Behavior type: 1: Urban (motorized)

Link length: 249,920 m Display type: 1: Road gray

Level: 1: Base

☐ Use as pedestrian area

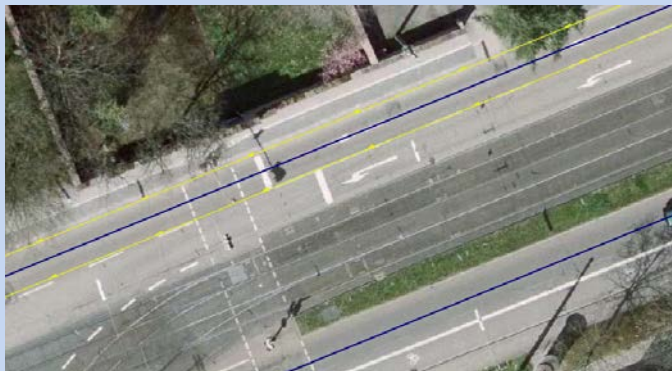
Lanes		Meso	Display	Others				
Count	Index	Width	BlockedVel	DisplayTyp	NoLnChLA	NoLnChRA	NoLnChLV	NoLnChRV
1	1	3,00			☒	☒	☒	☒

8. Change the value for lane width to 3.0 m and confirm with Ok.

9. Click inside link 2 and drag it up until it aligns with the road marking:



For exact alignment it is useful to switch to wireframe mode using Ctrl+A. Then the links are drawn transparent and only the edges and the centre line remain visible:

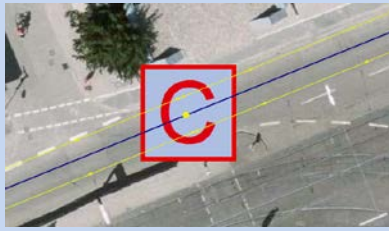


To go back to normal viewing mode, press Ctrl+A again.

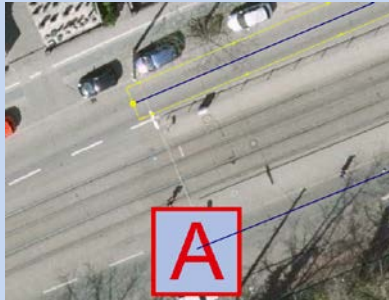
The left end of link 2 does not align with the background yet. Spline points are used to shape a link curvature:



10. Ctrl + right-click inside the link at position **C**. A new spline point is generated.

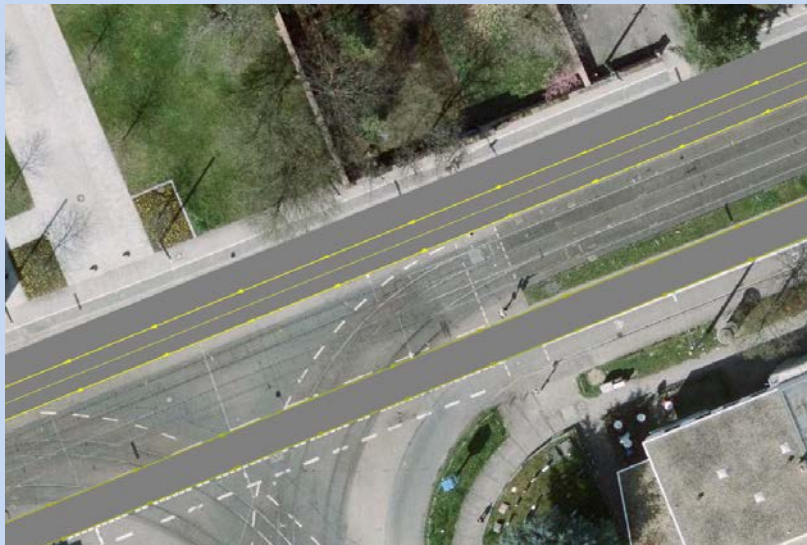


11. Pan the network to the end of link 2. Drag the link end point such that it matches with the background.



The spline point that we generated in the previous step now acts as a pin so that the link curvature is adjusted only for the section downstream of that spline point.

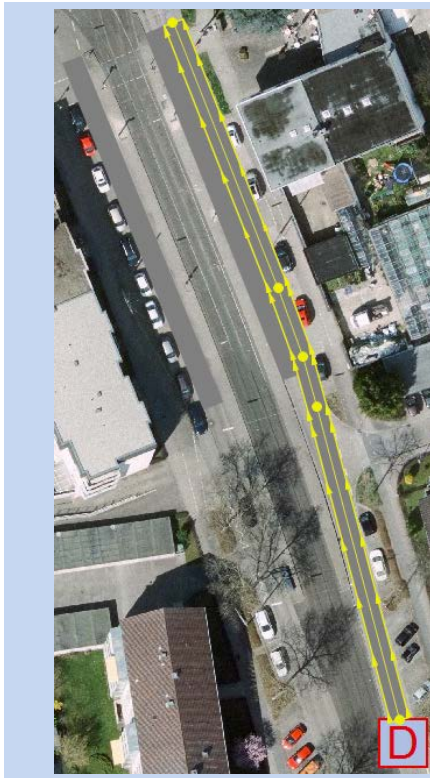
12. Add the link for left turn traffic from **B** to **D** by using **Duplicate**:
Click inside link 2, press **CTRL** and drag the mouse towards link 1:



13. Add a spline point inside link 3 just after the pedestrian crossing:



14. Drag the end spline point of link 3 onto the newly create spline point to shorten the link.
15. Add three more links on the south junction leg: two (left and right turn) for the traffic that **enters** the junction through **D** and one for all traffic that **exits** the junction.
Use spline points to adjust the curvature of the right turn lane.



3.2.2 Connectors

After the links are created, connectors are necessary to join them together. Just a geometrical overlap of two links does not allow vehicles to travel from one link to another. Here connectors are needed. Hence a typical travel path in Vissim consists of link – connector – link – connector and so on. Connectors can only be placed on links, not on another connectors.



1.  Make sure that the *Links* insert mode is still selected.
2. Pan to the end of link 4 (right turn from D to B).
3. **CTRL** + right-click inside link 4 (as close to the end as possible), keep the mouse button pressed and drag the mouse into link 1 shortly behind the pedestrian crossing:



4. Release the mouse button. The connector dialog box opens.



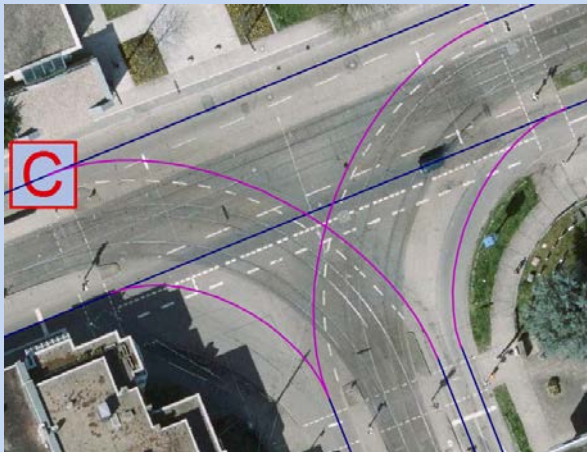
5. For *Spline* enter 15 and confirm with OK.

Length: 32.545 m
Spline: 15
☐ Has overtaking lane
Lane Change Meso Display

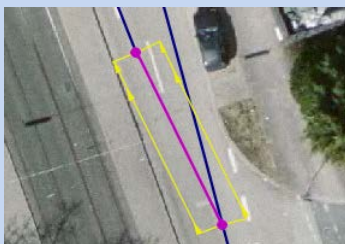
The connector is then shaped automatically:



6. In the same way, add connectors for the other 3 turning movements. In wireframe mode, connectors are shown in purple color:



7. One connector is still missing: Near position **D** the left turn link needs a connector starting from the (longer) right turn link. Here 2 spline points are sufficient:



3.3 Vehicle Inputs

Inputs define the traffic that should travel through the Vissim road network. They are located at the start of every link that enters the Vissim network and define the absolute vehicle volume **per hour**. Vehicles travelling on public transport lines must not be included here as they are modelled separately.

1. Select the  *Vehicle Inputs* insert mode
2. **CTRL** + right-click somewhere inside the link starting from position A (link 1).
→ A new vehicle input is added (indicated by a black bar at link start) and the *Vehicle Inputs* list opens.
3. In the *Vehicle Inputs* list, enter the
 - flow *Volume* = 550 veh/h
 - *Vehicle Composition* = 1

Vehicle Inputs					
Select layout...					
Count: 4	No	Name	Link	Volume(0)	VehComp(0)
1	1		1	550.0	1: Default

4. For the remaining three vehicle inputs, follow steps 2 to 3 clockwise for all incoming links. Use the volumes shown in the illustration below (volumes are shown as vehicles per hour):



5. After all vehicle inputs are created, the *Vehicle Inputs* list should look like this:

Vehicle Inputs					
Select layout...					
Count: 4	No	Name	Link	Volume(0)	VehComp(0)
1	1		1	550.0	1: Default
2	2		2	480.0	1: Default
3	3		3	120.0	1: Default
4	4		4	300.0	1: Default

3.4 Turning Movements

Routes define the path that a vehicle follows at road branches. A route is assigned to every vehicle arriving at a routing decision which currently has no route assigned. The route choice is done according to the route proportions for all the routes. At this point vehicles are neither generated, nor are they taken out of the network.

3.4.1 Add Routing Decisions and Routes



1. Select the  *Vehicle Routes (Static)* insert mode
2. Add a new routing decision with **CTRL** + right-click inside link 1 near the link start.



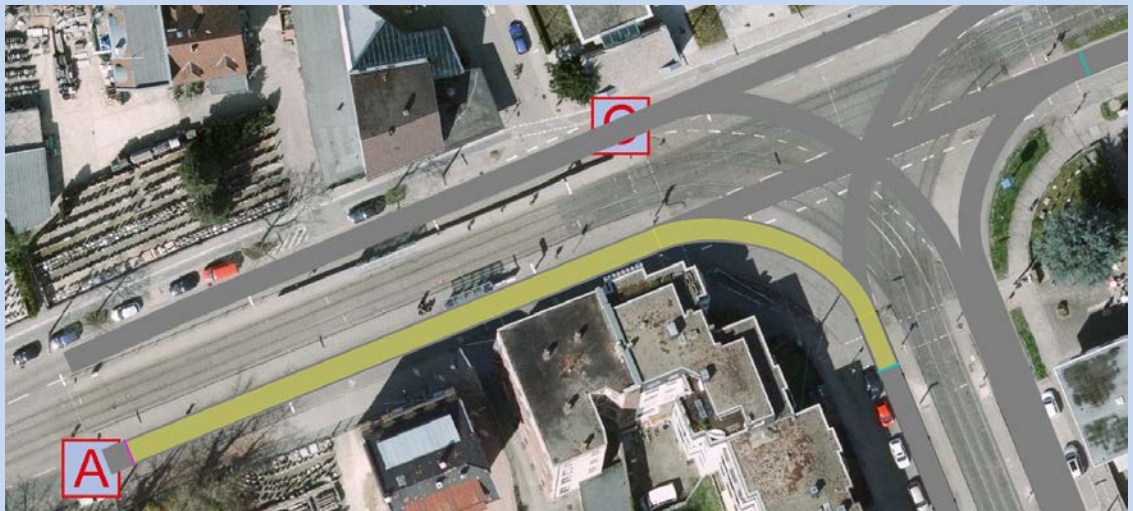
→ The routing decision (= route start) is shown as a purple bar and simultaneously a route destination marker (turquoise) “sticks” with the mouse pointer.

3. Move the mouse (with the sticky destination marker) on link 1 to the location just downstream of the pedestrian crossing at the far end of the junction (see illustration below) and click the left mouse button. The first route destination is defined and shown as a yellow band:



Without any further clicks another route destination marker sticks with the mouse pointer allowing you to define the next route destination:

4. Move the mouse onto the southbound link just downstream of the pedestrian crossing (see illustration below) and click again. The second route destination **starting from the same route start** is defined and also shown as a yellow band.



5. End the route definition mode by **double-clicking** outside of the Vissim network.
 6. Repeat steps 2 to 5 for all incoming links and all possible movements at this junction (clockwise).
- Be aware that for junction legs with more than one possible destination starting from the same link, the route destinations must belong to the same route start.
7. As a result, now there are 4 routing decisions (purple) and 6 route destinations (turquoise) which are visualized in the illustration below.

Hint: You can visualize all yellow bands simultaneously in the coupled list of *Static Vehicle Routing decisions / Static Vehicle Routes* by selecting all routing decisions and then all corresponding routes (see next section for details):



3.4.2 Turning Volumes

For a routing decision the *relative flow* defines how the arriving vehicles are distributed among all its routes. The *relative flow* is edited in a list.



1.  Show the *Static Vehicle Routing decisions / Static Vehicle Routes* list:

In the network objects sidebar, right-click on *Vehicle Routes* and select **SHOW LIST - STATIC**.

→ The coupled list of routing decisions (left) and the corresponding routes (right) is shown:

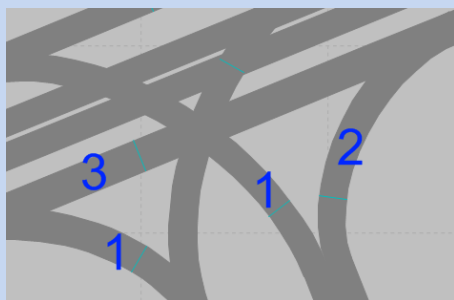
Static Vehicle Routing Decisions / Static Vehicle Routes													
Select layout...													
Count	No	Name	Link	Pos	AllVehTypes	VehClasses	Count	VehRoutDec	No	Name	DestLink	DestPos	RelFlow(0)
1	1		1	2.111	☒		1	1	1	6	8.638	1.000	
2	2		2	6.990	☒		2	1	2	1	138.917	3.000	
3	3		3	6.736	☒								
4	4		4	1.174	☒								

2. By default, on the left hand side of the list, the first routing decision is selected. Hence the corresponding routes are shown on the right hand side. As the *Synchronization* button  in the toolbar above the **right** part of the list is active, for any selected route the corresponding link sequence (yellow band) is highlighted in the network editor:



Static Vehicle Routing Decisions / Static Vehicle Routes													
Select layout...													
Count	No	Name	Link	Pos	AllVehTypes	VehClasses	Count	VehRoutDec	No	Name	DestLink	DestPos	RelFlow(0)
1	1		1	2.111	☒		1	1	1	6	8.638	1.000	
2	2		2	6.990	☒		2	1	2	1	138.917	3.000	
3	3		3	6.736	☒								
4	4		4	1.174	☒								

3. Edit the *relative flow* values for all routes where at least two routes start from the same routing decision (these are the routes starting near positions **A** and **D**) according to the illustration below:





The resulting route list is shown as soon as all routing decisions are selected on the left handside of the list:

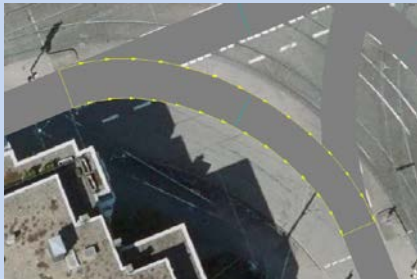
Count	6	VehRoutDec	No	Name	DestLink	DestPos	RelFlow(0)
1	1		1		1	100.574	3.000
2	1		2		10003	15.811	1.000
3	2		1		2	122.954	1.000
4	3		1		10002	21.617	1.000
5	4		1		10000	14.585	2.000
6	4		2		10001	13.635	1.000

3.5 Speed Reductions

Reduced speed areas are used to model short **temporary** speed **reductions**, for example at turning movements.



1. Select the  *Reduced Speed Area* insert mode.
2. Zoom to the connector leading from **A** to **D**:



3. Add a reduced speed area: about half way down the connector, press **CTRL** + right-click and drag the mouse for about 2-3 m while holding down the right button.

A yellow polygon indicates the dimensions of the reduced speed area:



Also the *Reduced Speed Area* dialog box opens:

Reduced Speed Area

No.: 1 Name:

Link - lane: 2 - 1

Length: 2,000 m Time From: 0 s

At: 13,490 m until 99999 s

☒ Show label

Count	VehClass	DesSpeedDistr	Decel
0			

OK Cancel



4. Assign speed distribution and deceleration for each relevant vehicle class: Right-click in the empty space below *VehClass* and select **ADD** from the context menu. Enter the values as shown below:

Count: 2	VehClass	DesSpeedDistr	Decel
1	10: Car	25: 25 km/h	2.00
2	20: HGV	20: 20 km/h	1.30

5. Repeat steps 2 to 4 for all relevant locations at the junction. The locations and desired speed distribution numbers are shown below for cars and HGVs accordingly.



3.6 Right of Way

Conflict areas are the preferred method to model unsignalized right of way.



1. Select the  **Conflict Areas** insert mode
→ all potential conflict areas are displayed as yellow (passive)
2. Zoom near position .
3. Right-click on the conflict area near position . The context menu opens:

Set Status to 2 waits for 1
Set Status to 1 waits for 2
Set Status to Undetermined

Select the desired right-of-way so that the straight link is marked as green:

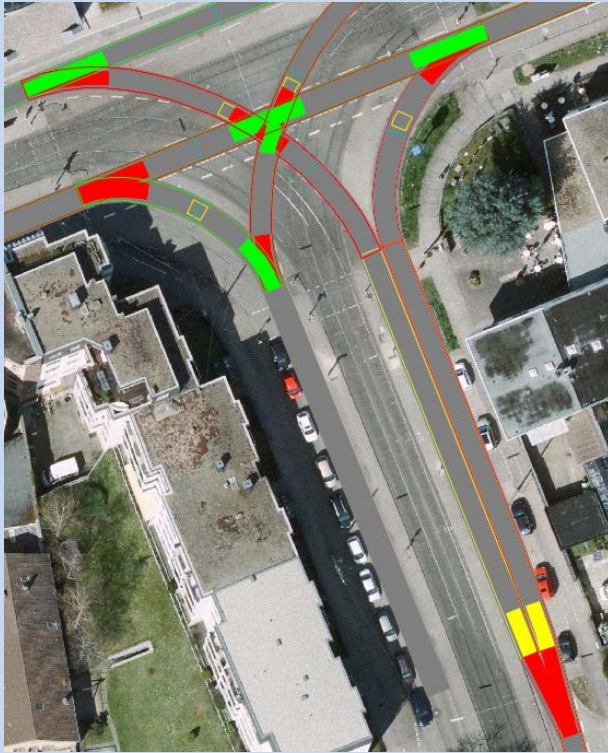


4. Pan down to edit the conflict area for the opposite direction. From the context menu select **SET STATUS TO UNDETERMINED**.





- This status is used for branching only, in order to avoid vehicle overlap when queuing.
5. Check and set the states for all other conflict areas. The main flow (right-of-way) is from **A** to **B** and vice versa. For assistance refer to the illustration below.



4 Run the Simulation

Now your “First steps”-network is ready for simulation.



1. Save the network file with a different file name in the same directory as the “First steps” examples.
2. Click on the RUN CONTINUOUS button  in the main toolbar.
If you have trouble running your Vissim file you may **load the demo** network file HEADQUARTERS_09.INPX and run the simulation from there.



Use the following commands to control the simulation:

- To pause, press  or **BLANK**.
- To continue step by step, press  or **BLANK**.
- To continue continuously, press  or **F5**.
- To stop the simulation, press  or **Esc**.
- To show/hide most network objects, press  or **CTRL+N** for SIMPLE NETWORK DISPLAY.

You may also watch object data during the simulation in the *Quick View* window. For vehicle selection it is advisable to activate single step mode beforehand.

5 Signal Control

Vissim offers a generic interface for signal controllers of various types. Here the **signal group based** fixed time controller type is explained as it is available with every Vissim license.

To create a signal control, various data are needed which typically originate from a dedicated signal control planning. As this procedure is time-consuming and done outside of Vissim, here the resulting data of the signal control planning are readily provided.



Continue with the Vissim network file you have created so far.

Alternatively or if you have trouble running your Vissim file, you may **load the demo** network file HEADQUARTERS 09.INPX and start from there.



Preparation for this example: At the junction, set all conflict areas to *passive* except those with undetermined status. They are not needed after the signal control is implemented:

1. In the network editor, right-click on any conflict area and select SHOW IN LIST. The list showing all conflict areas opens.
2. In the *Conflict Areas* list, right-click on the header of the *Status* column and select SORT ASCENDING. The list is now sorted by conflict area status:

Count	Link1	VisibLink1	Link2	VisibLink2	Status	FrontGap
1	1	100.0	10000	100.0	2 waits for 1	
2	1	100.0	10001	100.0	2 waits for 1	
3	2	100.0	10001	100.0	2 waits for 1	
4	1	100.0	10002	100.0	2 waits for 1	
5	10001	100.0	10002	100.0	1 waits for 2	
6	10002	100.0	10003	100.0	1 waits for 2	
7	1	100.0	10003	100.0	Undetermined	
8	4	100.0	10004	100.0	Undetermined	
9	4	100.0	5	100.0	Passive	

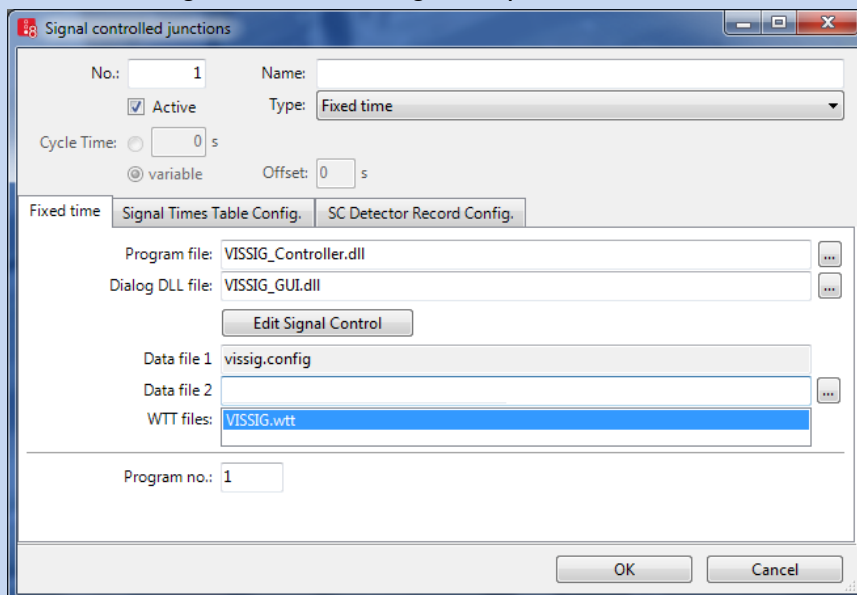
3. Within the status column, click to highlight the topmost cell. Then hold **SHIFT** and click the last cell before *Undetermined*. **SHIFT** + click on the drop down button and select *Passive* from the drop-down list.

Status	Status	FrontGap	Status
2 waits for 1	2 waits for 1		Passive
2 waits for 1	2 waits for 1		Passive
2 waits for 1	2 waits for 1		Passive
2 waits for 1	2 waits for 1		Passive
1 waits for 2	1 waits for 2		Passive
1 waits for 2	1 waits for 2		Passive
Undetermined	Undetermined		Undetermined
Undetermined	Undetermined		Undetermined
Passive	Passive		Passive

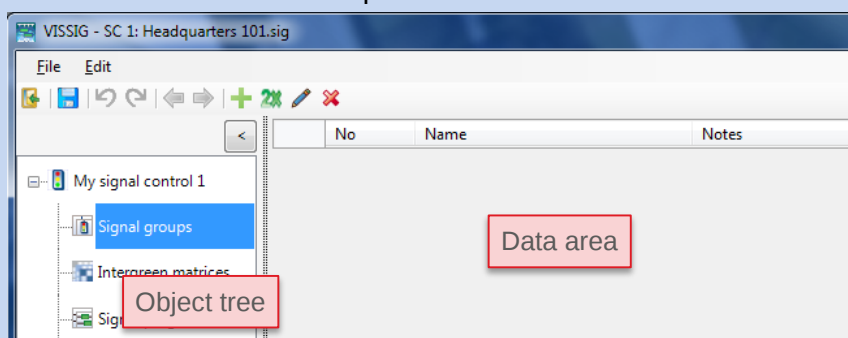
5.1 Signal Controller and Signal Groups



1. From the main menu select SIGNAL CONTROL - SIGNAL CONTROLLERS.
The *Signal Controllers* list opens.
2. Add a new signal control: Right-click in the empty list and select ADD from the context menu. The *Signal Control* dialog box opens:



3. In the dialog box *Signal Control* click on EDIT SIGNAL CONTROL.
The window *Fixed Time...* opens:

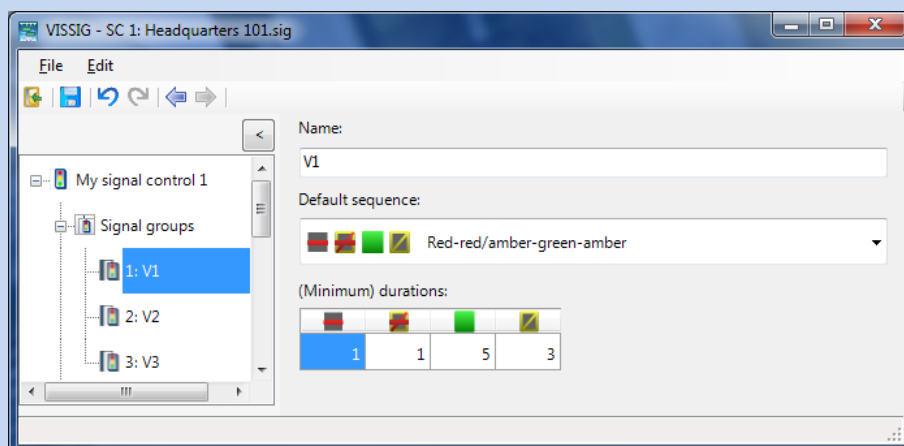


4. Add signal groups: In the data area, right-click and select NEW from the context menu.
Change the signal group name as shown below.
Repeat this procedure until all signal groups are defined as shown below:

No	Name
1	V1
2	V2
3	V3
4	V4
5	V5



- Define the default sequence for every signal group: Double click on the row header of the first signal group. The object tree is expanded and the details of the first signal group are shown:



Select the *default sequence* and define the *Default durations* for all signal groups as shown below:

V1-V5:

1	1	5	3

5.2 Intergreen Matrix



- From the object tree, select *Intergreen matrices*.
- Add an intergreen matrix: In the data area, right-click and select **NEW** from the context menu.
- Double click on the row header of the intergreen matrix. The matrix data is shown.
- Insert the intergreen times as shown in the illustration:

	1	2	3	4	5
1: V1			6	6	6
2: V2					7
3: V3	6				6
4: V4	6				
5: V5	6	7	6		

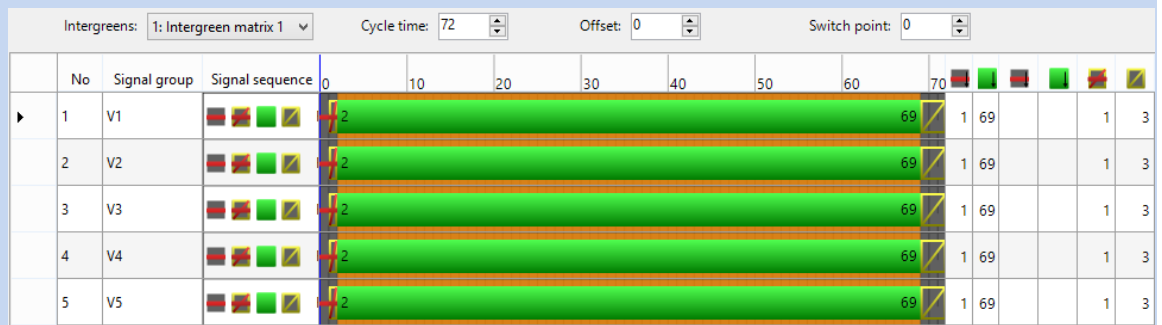
5.3 Signal Program



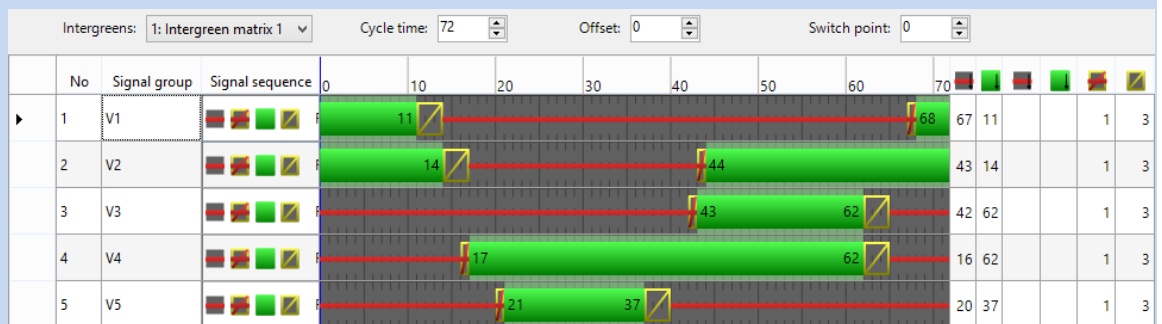
- From the object tree, select *Signal programs*.
- Add new signal program: In the data area, right-click and select **NEW** from the context menu.



3. Double click on the row header of the signal program. The data of the signal program is shown:



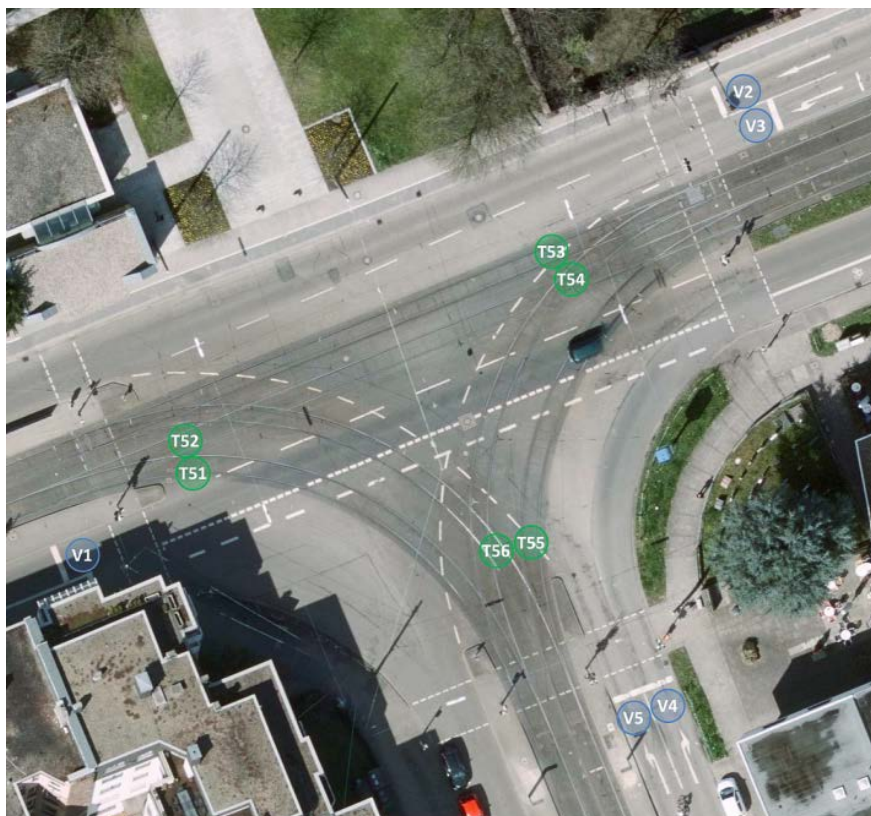
4. Edit signal program data:
- For *Intergreens*, select the intergreen matrix just created.
 - Define the *Cycle time* as 72 s.
5. Edit the signal times: for each signal group enter the for red end and green end time in the number fields to the right of the signal plan. Use the numbers as shown in the illustration:



6. Save the controller and close with FILE - EXIT.
7. Confirm the *Signal Control* dialog box with Ok.

5.4 Signal Heads

The locations of the signal groups are shown in the signal plan illustrated below:



Here the relevant signal groups are marked as blue for private traffic (V1 to V5). The Vissim signal heads should be placed on top of the corresponding stop lines.

5.4.1 Import Signal Plan in Vissim

For easier placement of the signal heads we recommend to import the signal plan in Vissim.



1. Select the *Background Images* insert mode
2. **CTRL** + right-click inside the network editor to add a new background image. The *Select Bitmap File* dialog box appears.
3. Select `TULLASTR SG.PNG` and press **OPEN**. A yellow bounding box appears around the background image even though the image itself is not visible (it is hidden by the other background image).
4. Right-click and select **SHOW IN LIST** from the context menu.
5. In the *Background Images* list, select the row of `TULLASTR SG.PNG` and edit the attributes:
 - `PosBLPt` = 372.151 837.90
 - `Width` = 117.665 (the height is adjusted automatically)
 - `zOffset` = -0.02

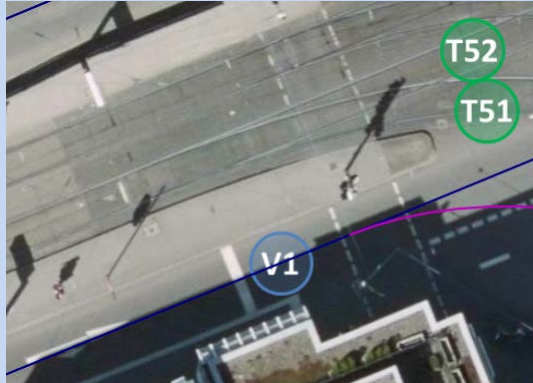
Background Images							
Select layout... <Single List>							
Count	PathFilename	PosBLPt	Width	Height	Level	ZOffset	RotAngle
1	Headquarters Aerial.ecw	20.000 730.000	500.000	250.000	1: Base	-0.030	0
2	Blue Box A.emf	319.729 845.22	8.000	7.973	1: Base	-0.010	0
3	Blue Box B.emf	535.624 932.73	8.000	7.973	1: Base	-0.010	0
4	Blue Box C.emf	390.036 890.63	8.000	7.973	1: Base	-0.010	0
5	Blue Box D.emf	467.406 783.48	8.000	7.973	1: Base	-0.010	0
6	Tullastr SG.png	372.151 837.90	117.665	105.755	1: Base	-0.020	0

Now the background image is correctly positioned and visible.

5.4.2 Add Signal Heads



1. Select the  *Signal Heads* insert mode
2. For better visibility of the signal head labels on the background map, switch to wireframe mode (**CTRL+A**)
3. Zoom to the left approach (near signal group V1).



4. **CTRL** + right-click inside link 1 on top of the stop line visible on the background near signal group V1: a red bar indicates the location of the signal head and a dialog box opens for data input.
5. In the *Signal Head* dialog box, check that the correct signal control (SC) is selected, and select the signal group number that corresponds with the label on the background map (1 for V1 etc.).

6. Repeat steps 4 and 5 for the remaining four signal heads according to the signal plan.

5.5 Run the Simulation

Now your signal control is ready for simulation.

If you have trouble running your Vissim file you may **load the demo** network file HEADQUARTERS 10.INPX and run the simulation from there.

Use the commands mentioned in chapter 4 to control the simulation run and watch the signal states changing during the simulation. Try **CTRL+N** for a clearer view on the network.

What is Next?

Congratulations!

You've now successfully completed your first steps with Vissim.

Would you like to explore more with PTV Vissim? We've included numerous examples with the Vissim installation dedicated to different application areas of transportation planning. You can easily access them through the menu **HELP - EXAMPLES**.



Discover more about PTV Vissim...



YouTube: Gain visual experience of PTV Vissim



Blog: Read all insights on transportation planning topics



Webinars: Register online or browse the archive of past webinars



Newsletter: Put your name on our emailing list to receive our quarterly news



Events: Meet us face to face at user group meetings and trade fairs



Training courses: See our current program and register online

Click on one of the illustrations above to open directly the corresponding website in your web browser.

Appendix A: Data for Vissim Projects

As a courtesy, here is a compact overview of typical input data for Vissim projects. You may use it as a checklist for typical Vissim application data.

Please note that because of the broad field of applications with PTV Vissim, this list cannot show all the data for all possible applications.

A 1 General Data

- Simulation time (for example 16:00 to 18:00 hrs)
- Warm-up period (depending on the size of the network)

A 2 Network Data

When using scanned maps, each map needs to be scaled and have the North direction clearly marked.

Scanning: An A4 plan scaled to 1:500 should be scanned with 300 dpi, other scales respectively.

Digital data: The maximum files size depends on the configuration of hardware and operating system. Please check if the desired file format is supported by Vissim.

- Plan showing the entire study area network
- Detailed plans for each junction showing lane markings, signal heads and detectors (if applicable)
- Number and width of lanes for all links within study area (if not already included in other plans)
- Plan showing all bus/train stop locations (if not already included in other plans)

A 3 Traffic Flow Data

- **Static Routing:** Turning movements for each junction and input flows for each entry link in Vissim. The input flow data needs to be given as **vehicles (not pcu) per hour**, even if intervals less than 60 min are used.
- **Dynamic Assignment:** OD-matrix for study area and locations of zone connectors/parking lots
- **Public transport** vehicles must be excluded from the above data as they are to be defined separately.
- Vehicle mix (for example HGV percentage)
- Vehicle lengths
- Desired speeds (actual speed of a vehicle at free flow) and their upper and lower boundaries in km/h at all entries of the study area and for all speed changes within the study area
- If possible, examples for real journey times and saturation flows (for calibration)

A 4 Signal Control Data

For every signalized junction

- Cycle length
- Amber and red-amber times (for example 3 s amber, 2 s red-amber)

Additionally for each fixed time signal control

- Timings for red end and green end for each phase (in Vissim a “phase” is referred to as “signal group”)

Additionally for each vehicle actuated signal control

- Stage definitions
- Interstage definitions (for example export out of Vissim)
- Minimum green and red times
- Flow chart of program logic
- Other parameters and specifications needed for implementation of logic

A 5 Transit (Public Transport) Data

Network information

- Routing of each line (bus/train) to be included in the simulation
- Length of platforms of stops (if not already included in a plan)
- Variation of desired speeds especially within bends

Service information

- Timetable or frequency and headway for entire simulation period
- Passenger interchange times (median and variation or empirical distribution). There can be different times for the same stop for different lines and for the same line at different stops.
- Level of service (for example punctuality) of all lines (median and variation or empirical distribution)
- Special requirements (for example waiting for connections)

Vehicle information

Ideally for every additional vehicle type a 3D model should be present (for example from the Vissim standard vehicle model library). Otherwise the vehicle is drawn as cuboid.

- Vehicle length
- Maximum acceleration and deceleration
- For articulated vehicles for each segment:
 - segment length
 - Position of
 - front axle
 - rear axle
 - front joint
 - rear joint
 - all doors including their widths
- If applicable, location of detector-activating equipment relative to the vehicle front.