CE 740 – Traffic Engineering

VISSIM Demo Session

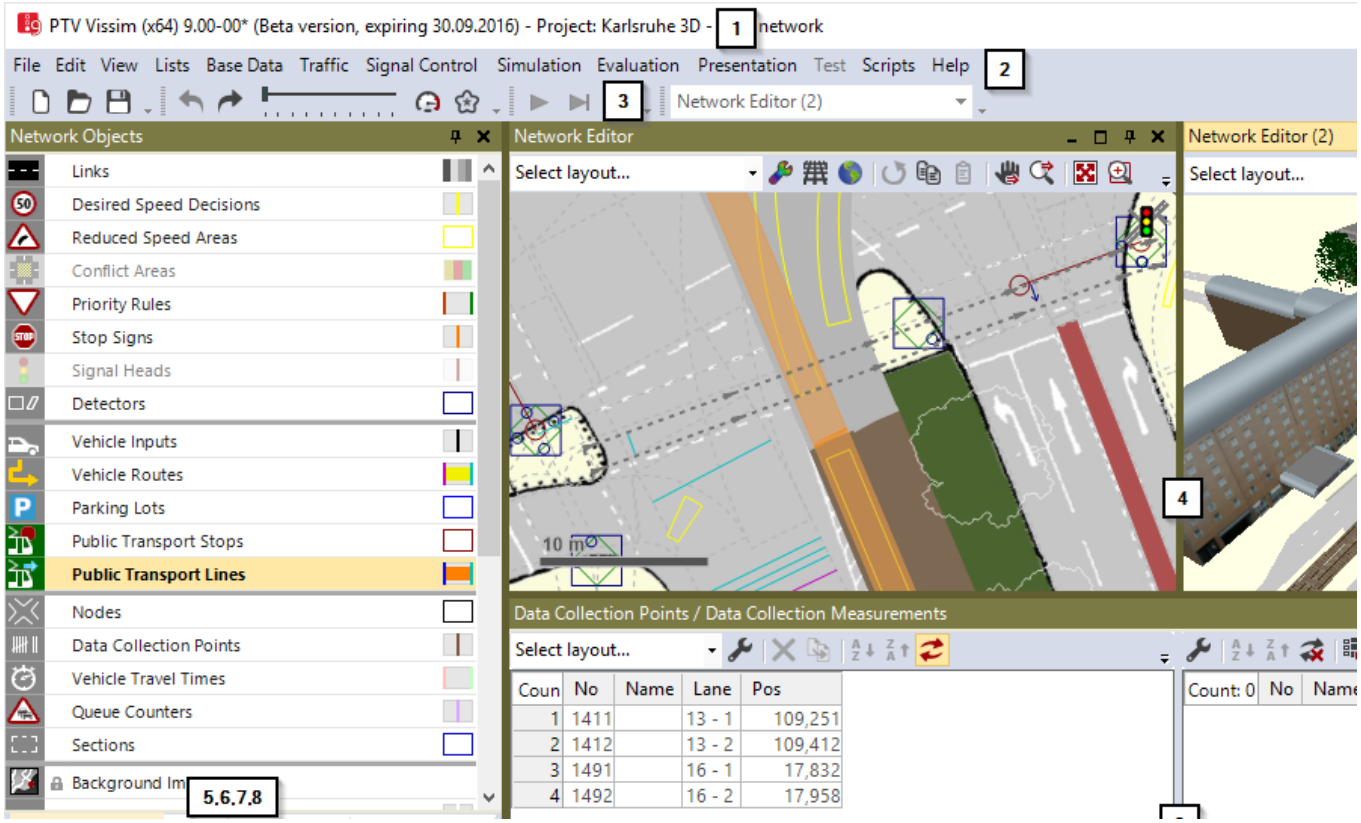
Introduction

- **PTV Vissim** is a microscopic multi-modal traffic flow simulation software package developed by PTV Planung Transport Verkehr AG in Karlsruhe, Germany.
- The name is derived from "**V**erkehr **I**n **S**tädten - **SIM**ulationsmodell" (German for "Traffic in cities - simulation model").
- PTV Vissim was first developed in 1992

Input data Required to model in Vissim

- Geometric details
- Inflow in a link
- Free flow speed
- Turning movement in intersection
- Speed limits
- Signal timing
- Pedestrian flow
- Parking data
- Simulation timing

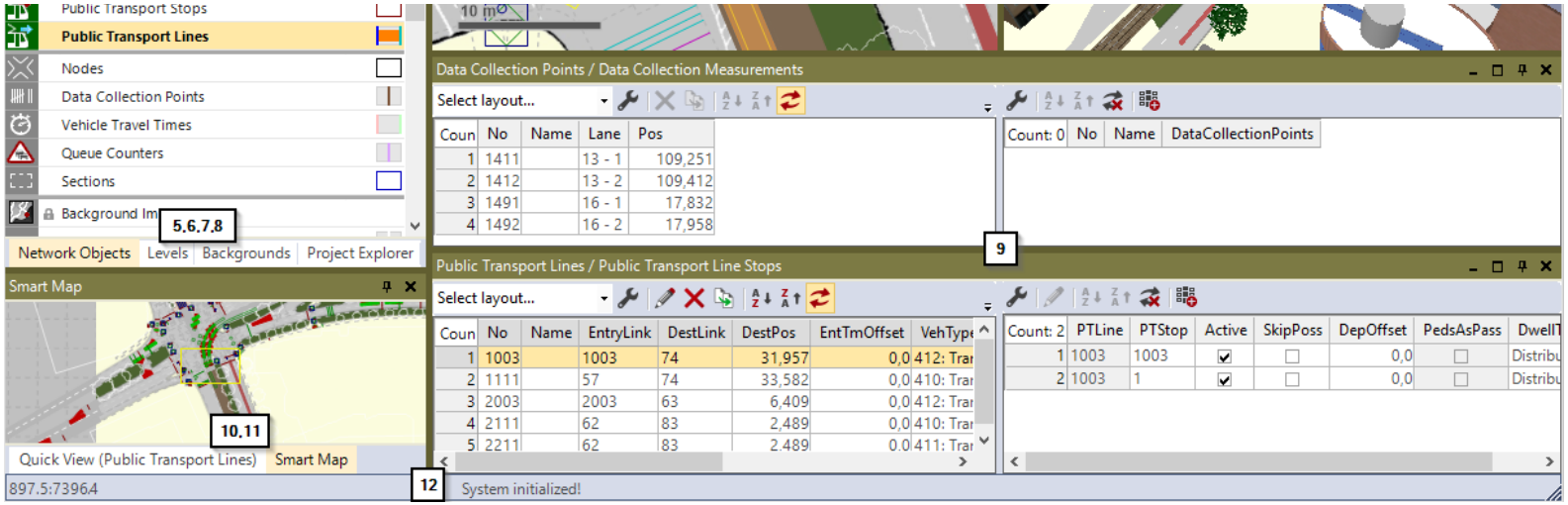
VISSIM window



(1) Title bar
(2) Menu bar
(3) Toolbars
(4) Network Editors
(5) Network objects toolbar, level toolbar and background image toolbar are shown together by default in a window on tabs.
(6) Levels toolbar
(7) Back-ground tool-bar
8) Project explorer

VISSIM window

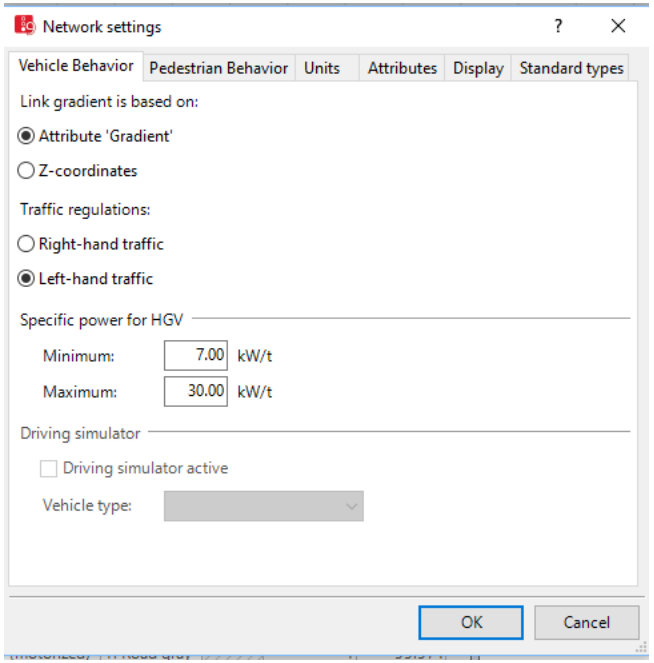
(9) Lists
(10) Quick View
(11) Smart Map
12) Status

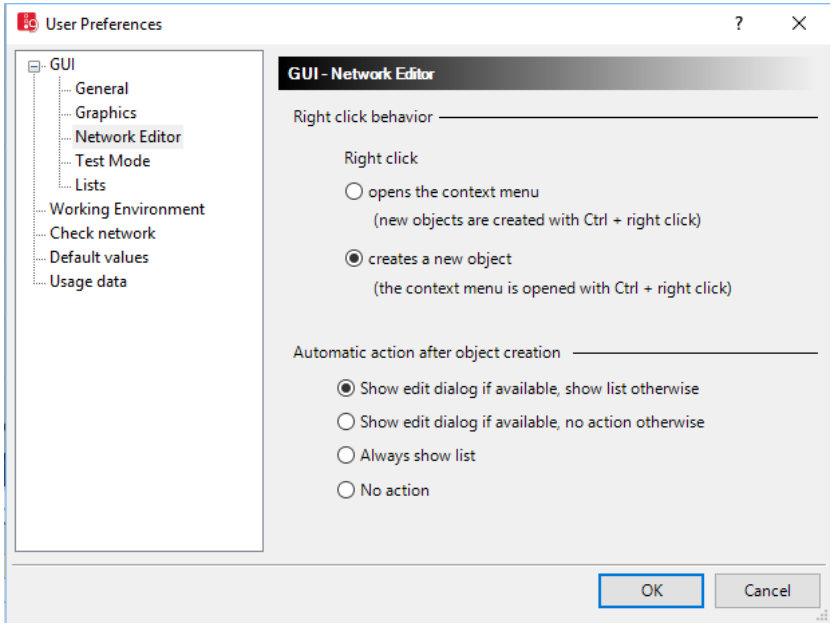


Initial settings

Base data----> Network settings

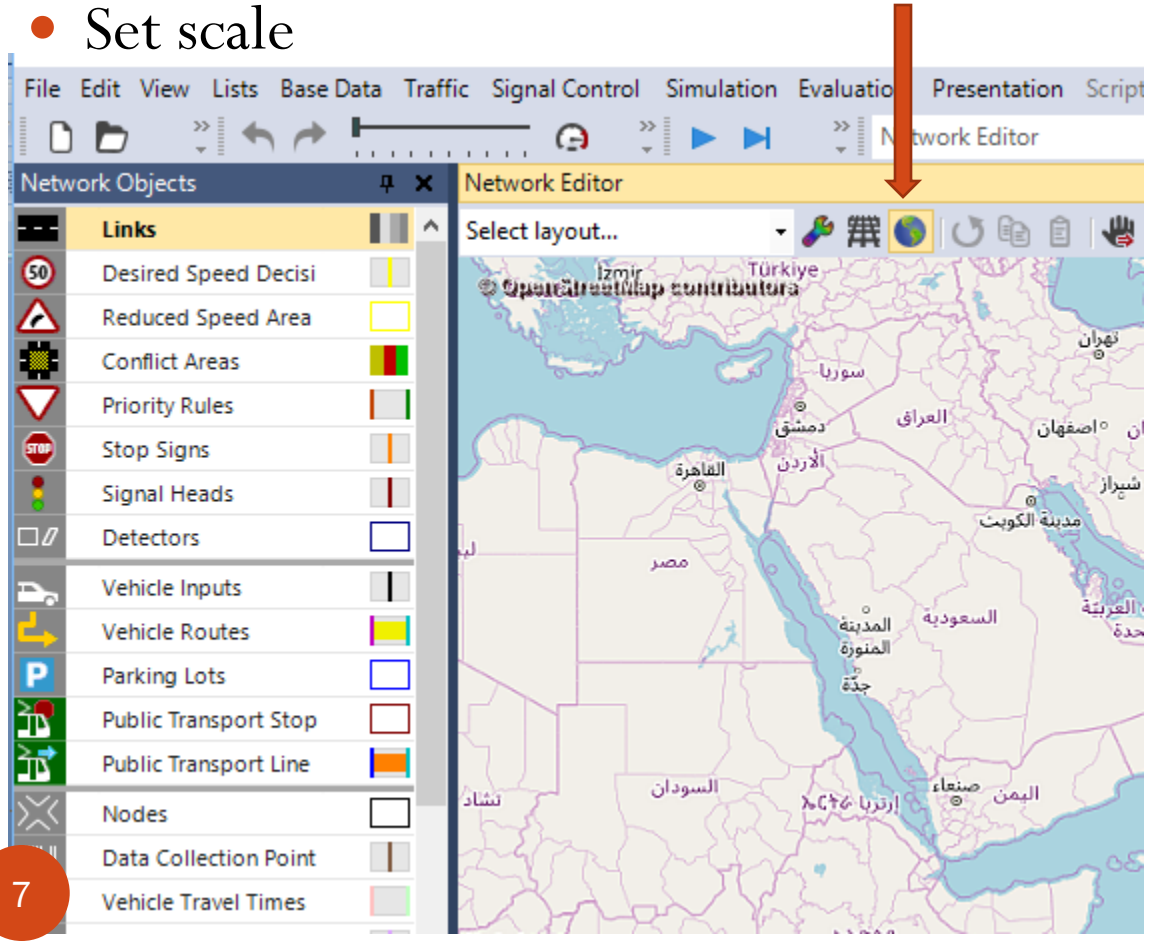
Edit--------> User preference

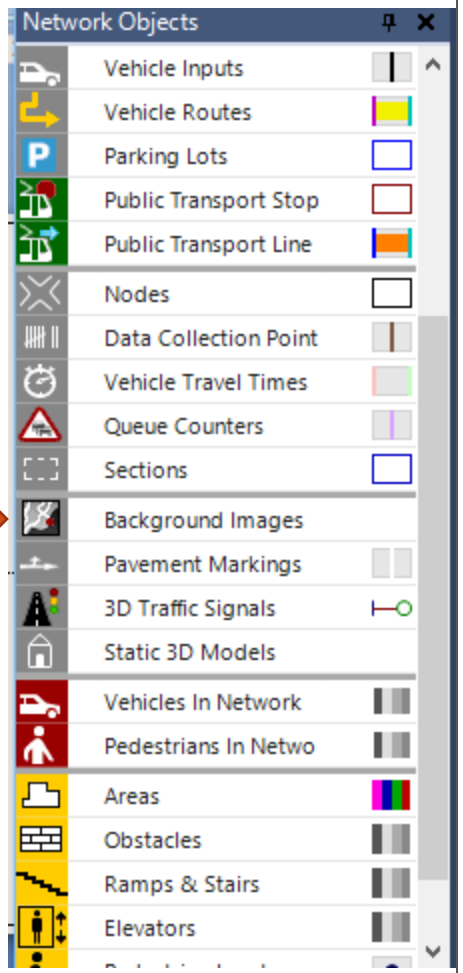




Background on which network is drawn

- Using map
- Using Background image
- Set scale





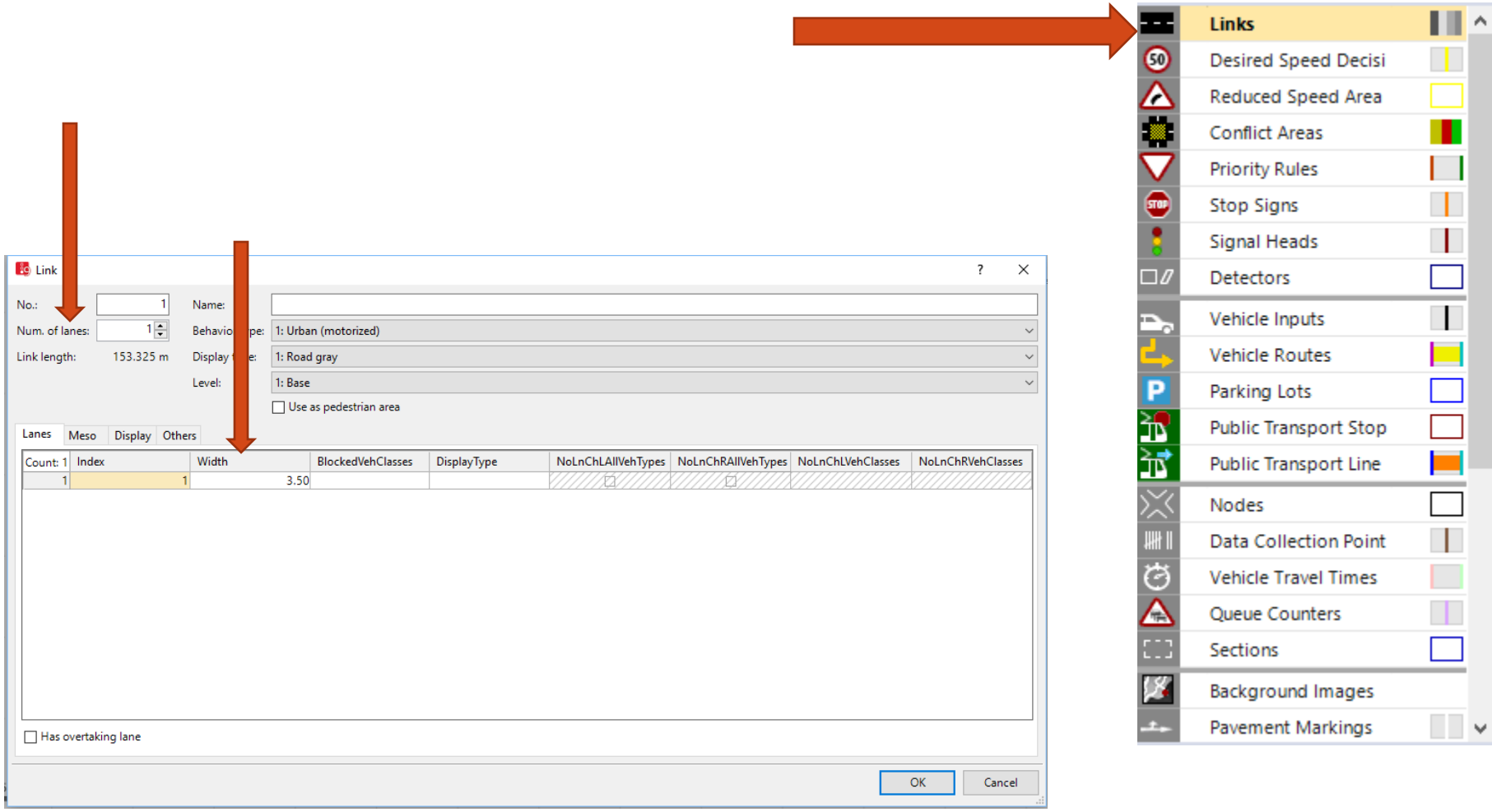
Creating links and connectors

•Roads in VISSIM are drawn using the link command

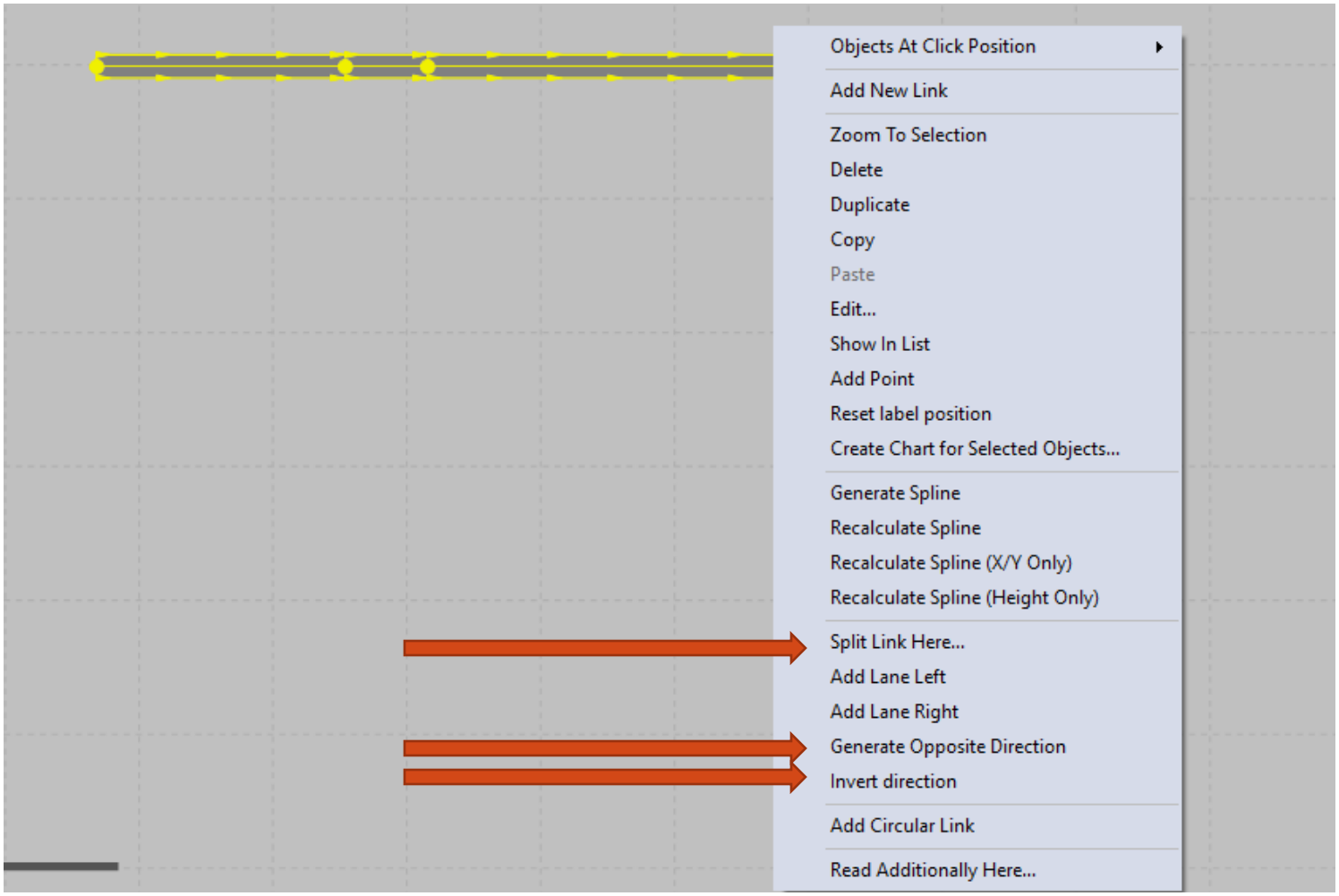
•Connectors are used to connect two link like in intersection to connect North south link to East west link

- Create link (See status bar for length)
- Lane width/No of lanes
- Generate opposite direction
- Invert
- Split link
- Spline
- Z offset
- Connectors

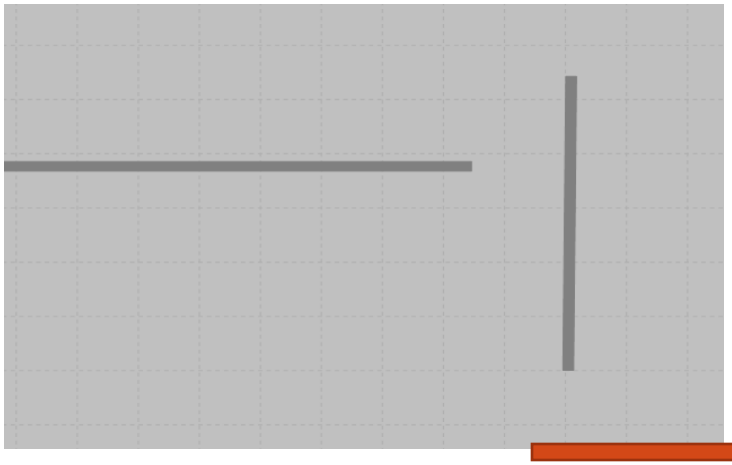
Creating links and connectors

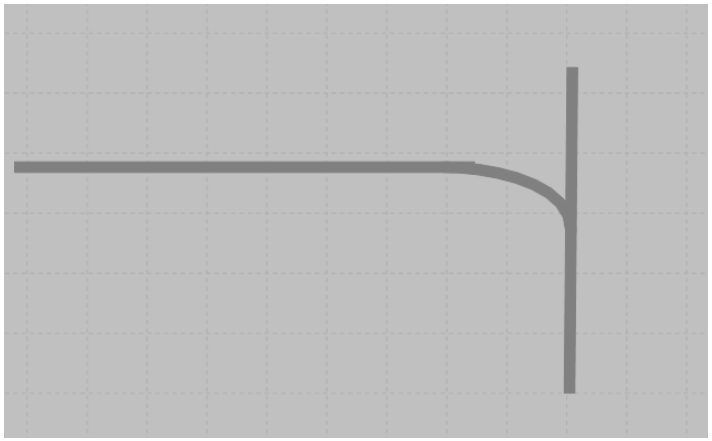


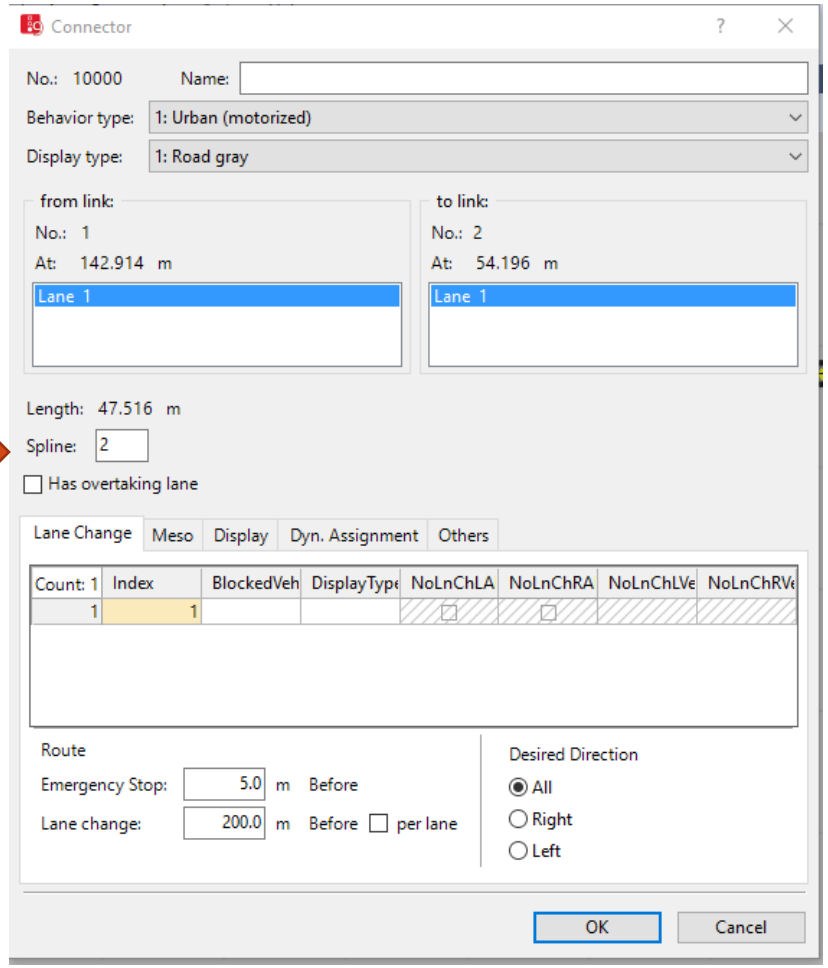
Creating links and connectors



Creating links and connectors

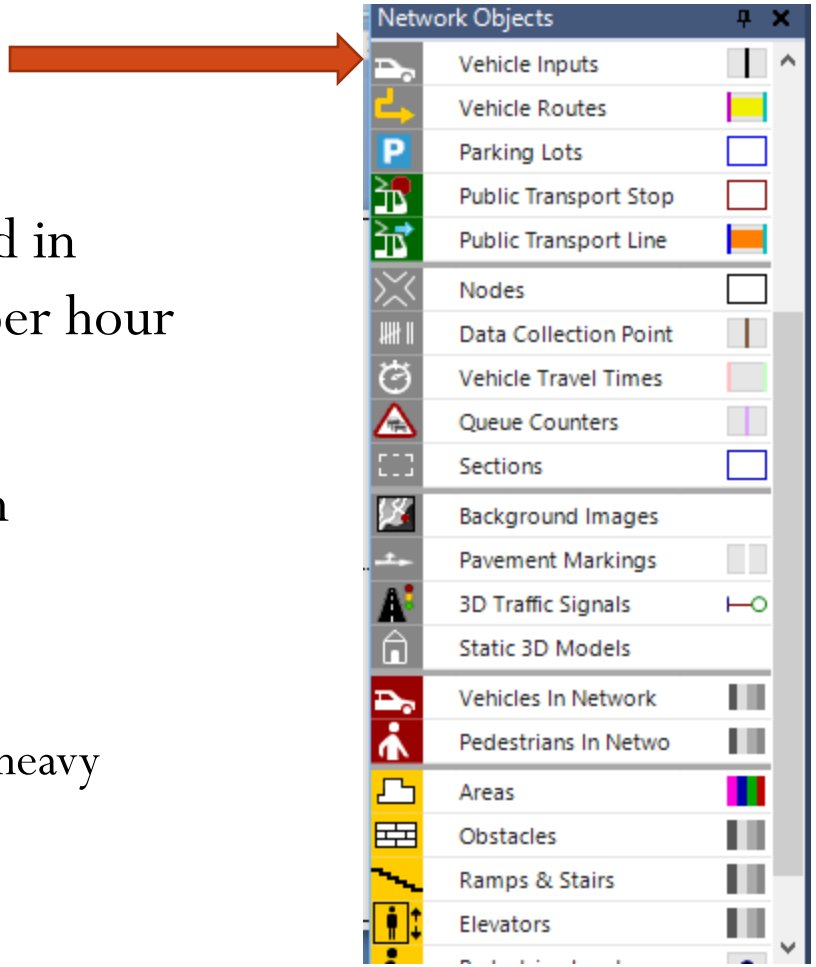




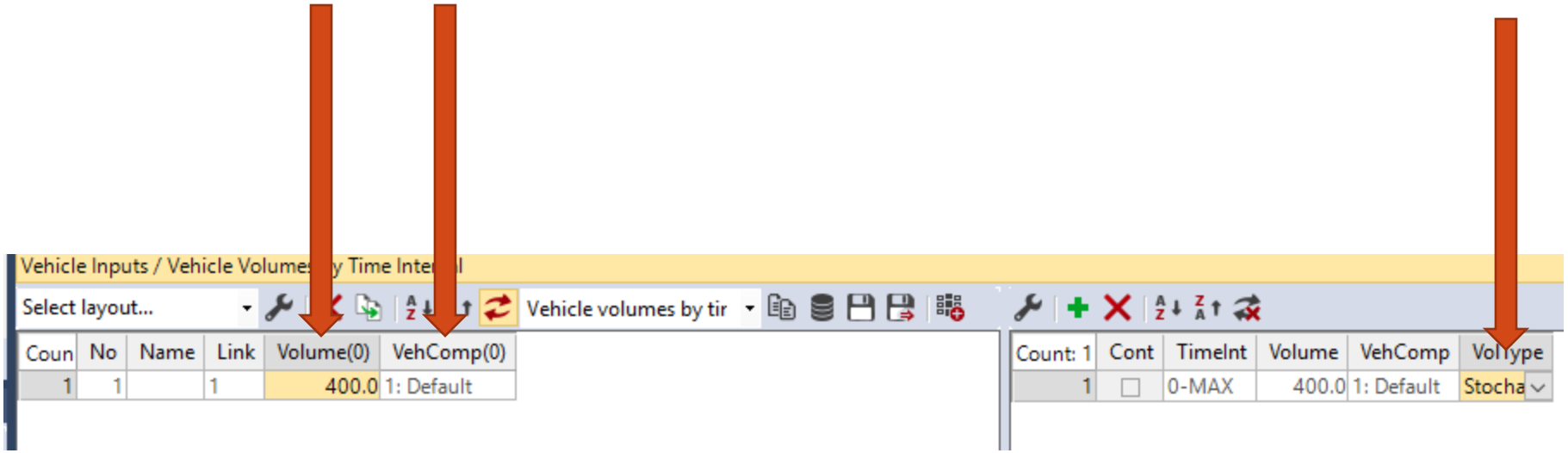


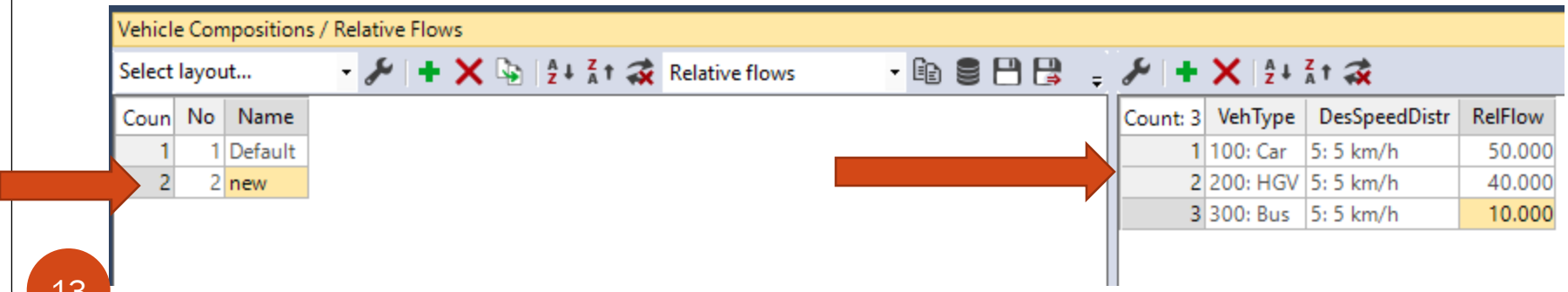
Vehicle input

- Volume
  - The volume is mentioned in terms of no. of vehicles per hour
- Vehicle composition
  - New vehicle composition
  - Desired speed m/s
  - Relative flow
    - Percentage of car,2w, bus, heavy vehicle etc
- Time intervals
  - Volume in veh/hr for each time interval

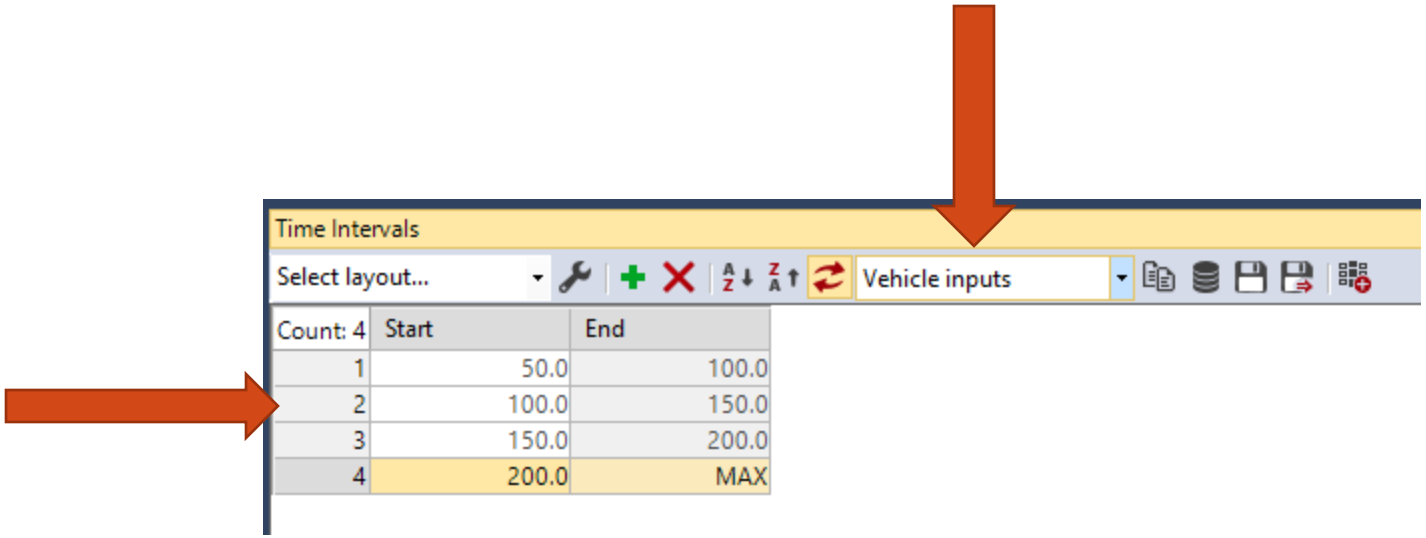


Vehicle input





Vehicle input

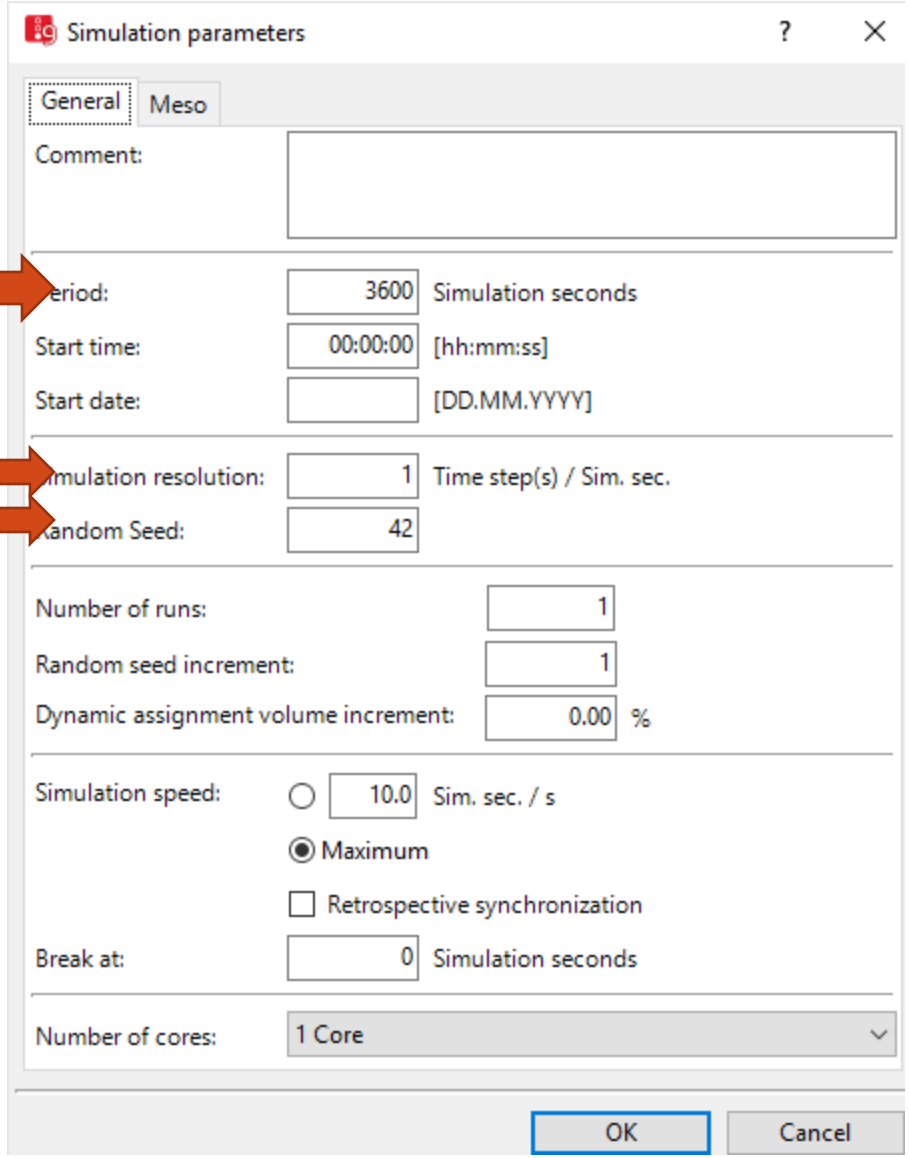


VISSIM Simulation settings

Amount of time the simulation will run

For every simulation second how many times the position will be calculated

For different random seeds the generation of vehicles will vary



Routes

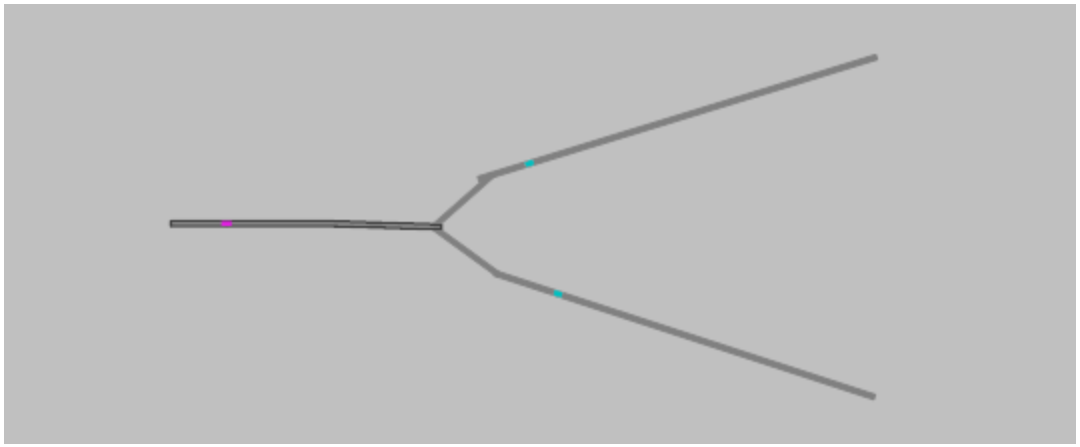
- Each wing
- Relative flow

Static Vehicle Routing Decisions / Static Vehicle Routes

Select layout... | Static vehicle routes

Coun	No	Name	Link	Pos	AllVehTypes	VehClasses
1	1		1	39.298	☑	

Count: 2	VehRoutDec	No	Name	DestLink	DestPos	RelFlow(0)
1	1	1		3	47.120	1.000
2	1	2		2	37.564	1.000

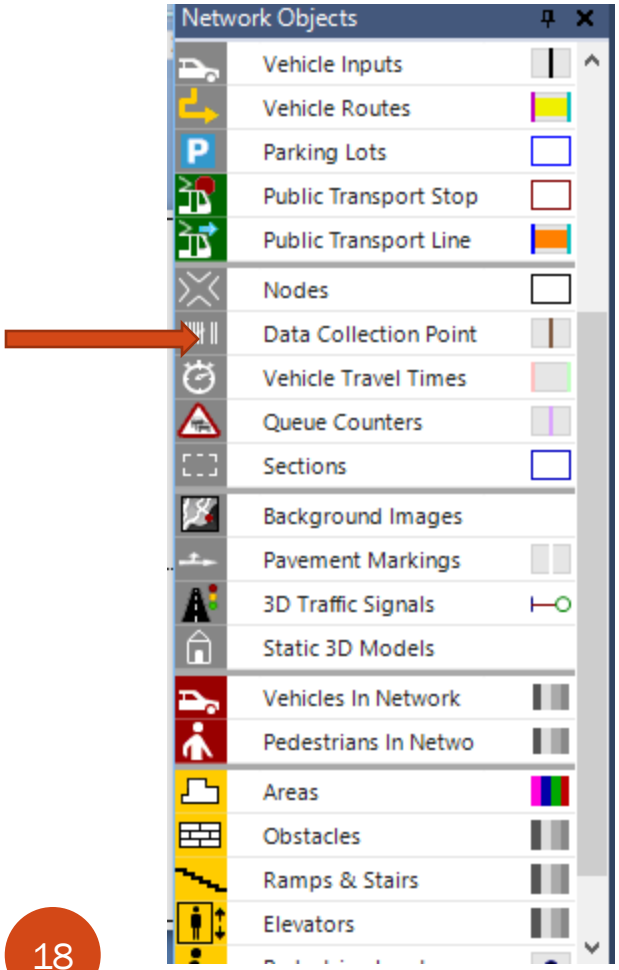


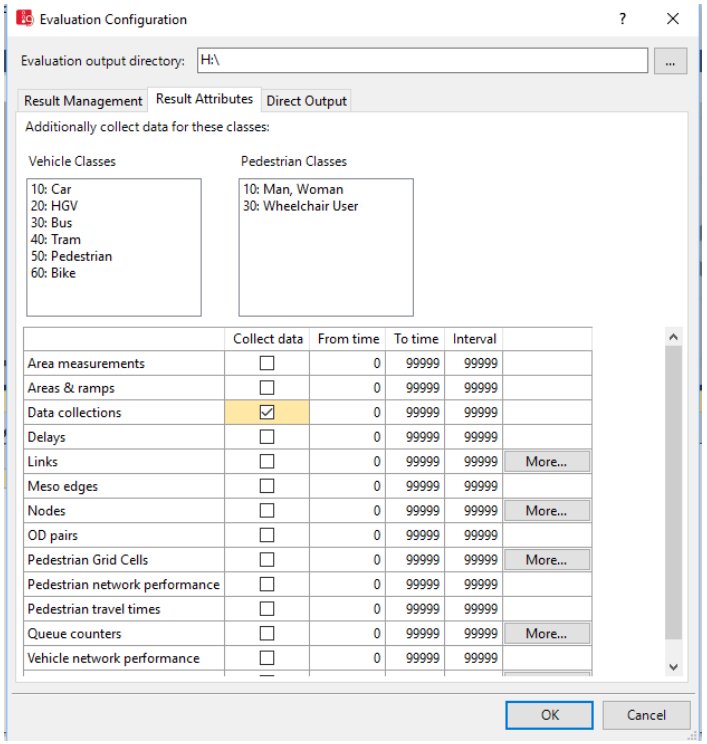
Data output (MoE)

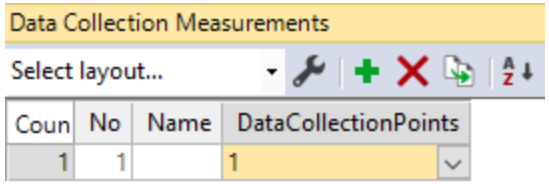
- Traffic performance measures of effectiveness is to quantify the achievement of a project's traffic operations objectives.
- For evaluating the traffic operations performance of highway facilities
- Travel Time
- Speed
- Delay
- Queue
- Flow
- Density

Data output

- Data collection point







Thank you