

“Road Traffic Library” Webinar Q&A

Arash Mahdavi
Simulation and Modeling Consultant
The AnyLogic Company

July 27th, 2016
Chicago, IL, USA



© The AnyLogic Company | www.anylogic.com

Is there any shortest path algorithm implemented for the cars to go to its destination? if so, will it take into consideration the traffic density?

- Cars calculate the shortest path using Dijkstra's algorithm. It does not take into account the traffic density on the roads.

What about synchronicity of traffic lights, and b) how many intersections can the model hold?

- There is no synchronization feature built into AnyLogic. However, you can synchronize traffic lights with parameters similar to what is shown in the optimization process of the webinar. For example, one parameter can be used in several traffic lights to define phase duration.

What if a pedestrian is walking out in the last lane, and you want a car in the first lane starts to move?

- This can be done with additional logic by using areas and maybe cyclic events for regular checking. There is a post in LinkedIn by Benjamin Schumann: <https://www.linkedin.com/groups/1524407/1524407-6143301607116333056> that discusses this topic in details. Also check Andrey Malykhanov's comment under this post.

With the custom approach, can you create car behavior and arrival times that produce traffic jams on a highway, like roads?

- One of the ways is to add stop lines in lanes randomly and set it as “speed limit”. Thus, some cars will need to slow down that will affect on the traffic. Also it is possible to make cars stop before these stop lines. It will be something like car accident.

Do you have any suggestions on how to model a railway crossing efficiently? For instance, if we want to turn the light red when any moving train is within X feet, how could we do this? One option is to have every moving train check X feet in front of it every few seconds or minutes through a dynamic event and another option would be to have the parking light checking the track X feet in either direction, but both of these options are computationally expensive.

- I suggest using traffic lights in manual mode. There is switchPhase function; the Train can close the railroad crossing as soon as it reaches some point on the track. It does not need to check it cyclically.

Do you have a library to support cyclists' movement, as well as all-way stop or roundabouts as opposed to signalized intersections?

- Not currently, but may be added in the future
- As a workaround, all-way stop can be implemented with stop lines. In this case you'll need to make the car move to the stop line and stop before. Then, use another "Car Move To" block to make the car move further. If there are no traffic lights on the intersection, the car will follow priority of the right rule.

If my background image has geocoordinates (e.g., if it is a geotiff) can the road network calculate the X,Y in map coordinates? Or, can the road network come from a Shapefile?

- The Network can be converted from a shapefile. AnyLogic c does not work with images like geotiff.

Suppose I'm running a simulation using Road Traffic, and the simulation is running extremely slowly. Are there any particular settings or parameters I can change within Road Traffic to speed up the model?

- This depends on the model (e.g. it can have some “heavy” logic inside). The library does not have any settings that could speed up the model if it is slow.

It was great to see the transit route module, is it sensitive to transit demand (e.g. observing more delay at bus stops if more passengers are waiting)? Could we change the logic (or behavior) of passengers going to a bus stop (e.g. leave the stop if the bus is late)?

- We can implement any custom logic for passengers and buses on stops, e.g., relating the delay time to the number of passengers in the bus stop.

Are the traffic libraries available in student versions?

- Yes, it is available in PLE and University Researcher versions too.

Thank you!

Our website:	AnyLogic.com
Models online:	RunTheModel.com
My email:	Mahdavi@anylogic.com