**Limitations:**

In order to maintain the performance of the Traffic Control Simulation, we set a certain amount of limitations. Here is the list of different limitations.

**Transportation stream**

* Type of vehicles
* Maximum number of vehicles shown at the traffic lights.
* Maximum number of vehicles coming outside the crossing.

**Pedestrian stream**

* Maximum number of pedestrians shown at the traffic lights.
* Minimum and maximum number of pedestrians coming to the traffic lights.

**Speed**

* Vehicle speed.
* Pedestrian speed.

**Crossing**

* Minimum and maximum number of crossings.
* Adding & Removing Crossings.
* Type of crossings.

**Operation**

* Operations of the timer.
* Operations of the start, pause and stop.
* Operations of the performance.

**Transportation stream**

* Type of vehicles

As far as the simulation of traffic control system is concerned, vehicles will only be presented as cars with small squares or rectangles. Also, details about the passengers will not be specified.

* Maximum number of vehicles shown at the traffic lights

Concerning about the scales of the maps, we decide to set the maximum number of vehicles shown at the traffic lights to 20.

* Maximum number of vehicles coming outside the crossing

The number of vehicles coming outside the crossing is set to 60 maximum, which would be better benefited in observing the stream.

**Pedestrian stream**

* Maximum number of pedestrians shown at the traffic lights

Concerning about the scales of the maps, we decide to set the maximum number of pedestrians shown at the traffic lights to 10.

* Minimum and maximum number of pedestrians coming to the traffic lights

The number of pedestrians coming outside the crossing is set to 30 maximum, which would be better benefited in observing the stream.

**Speed**

* Vehicle speed

The speed of vehicles at the crossing will be two options, including 50km/h and 70km/h. Lower speed will consume time to perform the car movement as well as higher speed will affect the process of checking the stream correctly. All vehicles will move at the same speed each time.

* Pedestrian speed

The speed of vehicles at the crossing will only be in one circumstance which is 4km/h. All pedestrians will move at the same speed each time.

**Crossing**

* Minimum and maximum number of crossings

In order to work the simulation, we have to have at least 1 crossing. Suggested number is 4-5. And on the other hands, we can have maximum 10 crossings.

* Adding & Removing Crossings

The crossing will be added and removed from the simulation map (form) when the simulation is stopped or paused. It will not be possible to add a second crossing or even more if it doesn’t connect to the existing one. On the other hand, it will also not be possible to remove crossing(s) if afterwards the rest crossings are not able to connect to each other.

The simulation must restart working from the beginning when the crossing is added or removed. This is mostly because otherwise it will cause troubles due to the fact that there are cars driving on the road and pedestrians walking.

Removing crossings, which divides map in several separate maps will result blank space in the map and the communication between other crossings will be interrupted or even lost unexpectedly.

* Type of crossings

There will be two kinds of crossings, which are three-direction crossing and four-direction crossing respectively.

**Operation**

* Operations of the input

The input will be made by the user.

* Operations of the performance

The performance (changing the traffic lights, cars movement, etc.) will be done automatically by the simulation, for this purpose some of the programming language tools will be used like timer.