

## TRAFFIC LIGHTS PARAMETERS OPTIMIZATION BASED ON ROAD SECTION SIMULATION

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The constant growth of cities has resulted in an issue with traffic congestion. Nowadays traffic lights are being regulated manually or by using the preset mean values of intensity. The purpose of the abstract is to provide a solution to the problem by developing a system for optimizing traffic control parameters based on constantly changing intensity parameters taken from cameras.

The system is based on Petri-object simulation [1] and is operating with the next objects: crossroads and crossovers [2]. In the abstract using a genetic algorithm to deal with the problem is suggested. Such information as intensities, green and red lights duration of the crossroads, the time spent to drive over crossroads or crossovers is used as a set of properties of the candidates in population. A fitness function is measuring the maximum of mean car numbers on the crossroads.

The scheme of the road section used for analysis is shown in the Fig. 1. Two runs with simulation time set to thirty minutes were done: one using static preset intensity based on mean intensity during the simulation time, another one had one intensity parameter of the crossroad 3 type 2 dynamically changing every minute based on incoming data from the cameras during the run. The resulted fitness function for static intensity run equaled 89.7 at the start followed by 83.74 at the end and for the dynamic intensity the starting point was 84.2 reaching the end point of 72.28.

The result of simulation has proved that using static preset intensity parameters based on mean intensity during the specific time period doesn't lead to the best results, therefore, traffic congestion situation could be eased through implementing the system which will result in an increasing flexibility of the traffic control. Having stated that, the installation of more cameras on crossroad leading to getting more intensity parameters for the system to work properly is considered to be a matter of great importance.

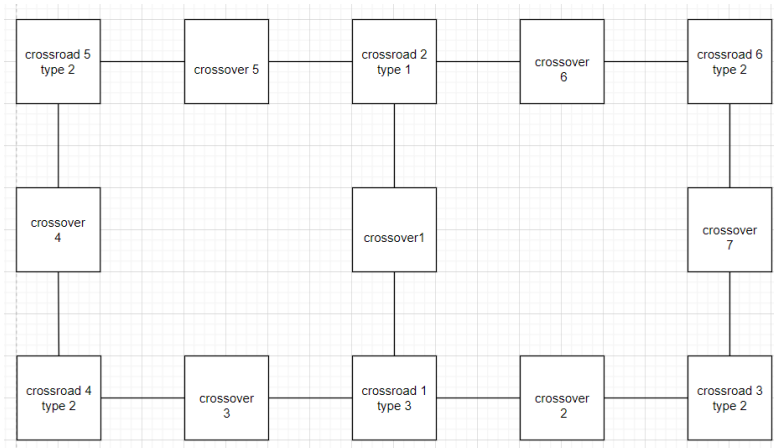


Fig. 1. Scheme of the traffic section

## References

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## MODELING THE EDUCATIONAL ENVIRONMENT OF STUDENTS AS A MODEL FOR THE DISSEMINATION OF INFORMATION IN SOCIETY

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In today's world, the ability of employees to learn quickly is an urgent issue [1, 2]. With the rapidly increasing level and quantity of technology