Smart traffic light

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Goal

Increasing the safety of vehicles when drivers crossing intersections regulated by traffic lights

Main task

Development of a system for warning drivers about potential danger from vehicles that are initially out of their line of sight

Object of the research

In the process of working on the project, a method of traffic light control was invented, which allows you to warn all drivers about the inappropriate behavior of one of the traffic participants

Model

Model of a closed intersection, on which algorithms for informing drivers are developed about possible danger from vehicles, which can leave the "blind" zones

Topicality

"In Ukraine, on average, an accident happens every three minutes, every fifteen minutes one person is injured, and every three hours one person dies"

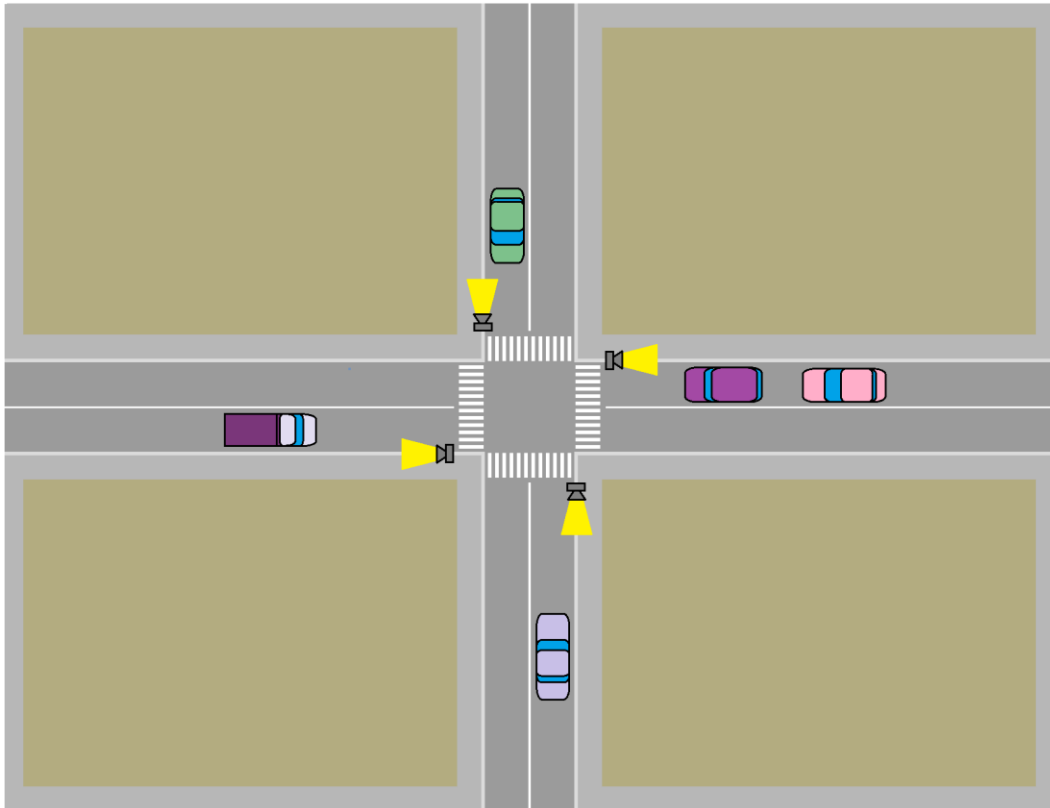(c) Ministry of Internal Affairs of Ukraine

Novelty

The smart traffic light not only gives light commands, but also monitors their execution and promptly informs all participants of the movement about violators, able to create an emergency situation
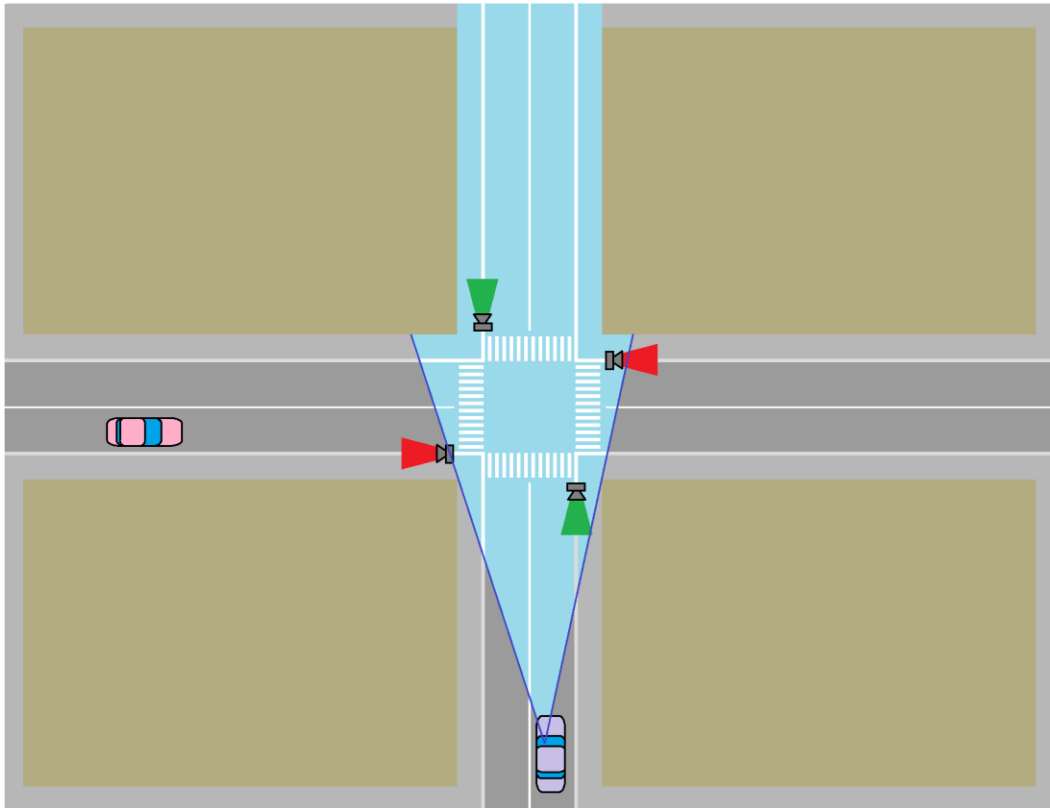
How it works

Consider the movement of a vehicle through an intersection with limited visibility
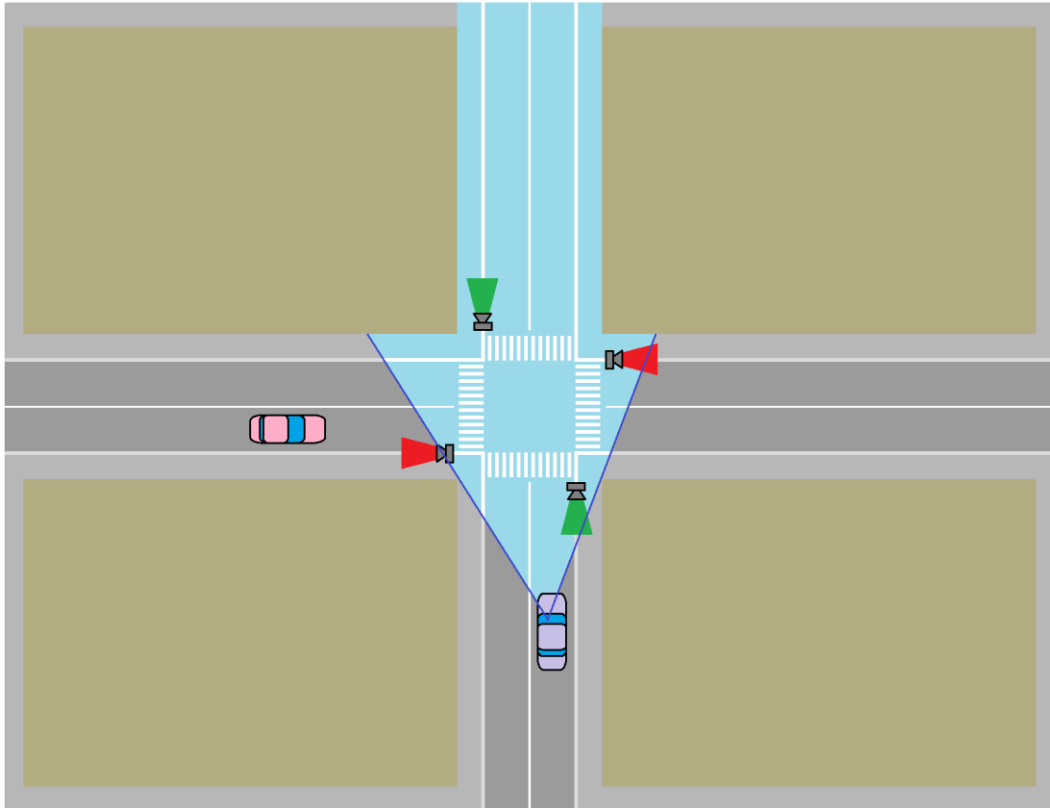
Exposition

A traffic light regulates traffic through an ordinary intersection with limited visibility
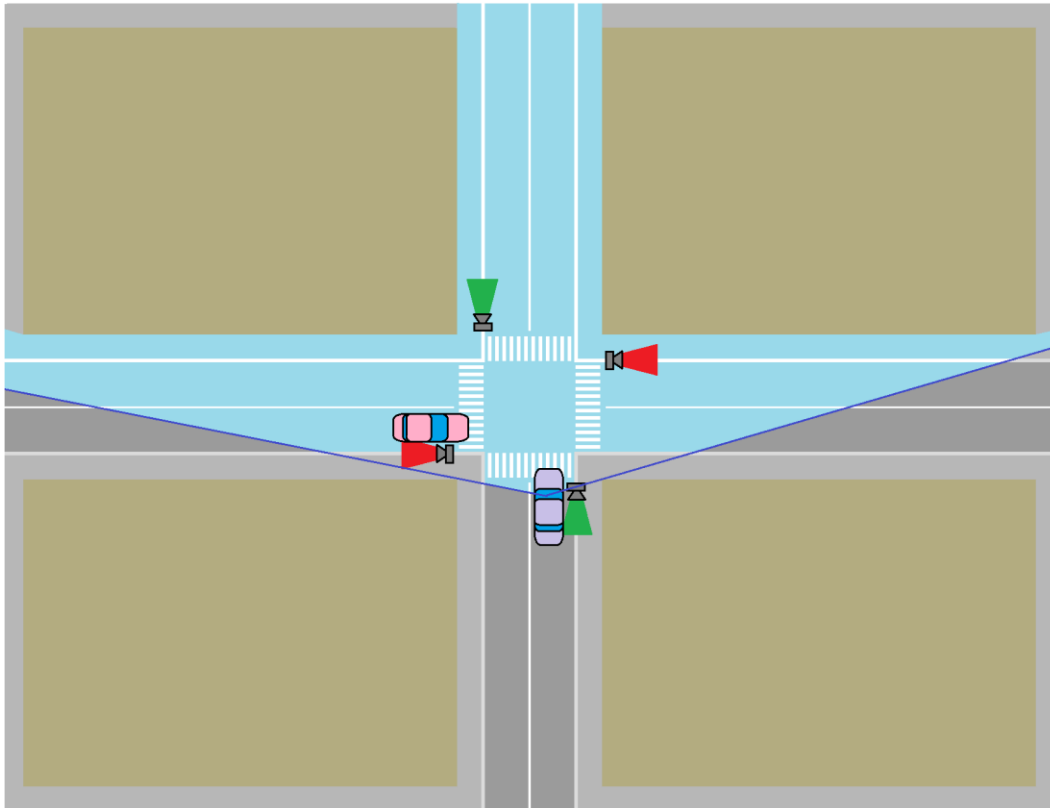
Rising action

The driver of the purple car drives when the green of the traffic light is on for his side of the road with confidence that the other road drivers are also follow the rules

Development of the action

The driver of the pink car is in a hurry and does not pay attention to the traffic lights
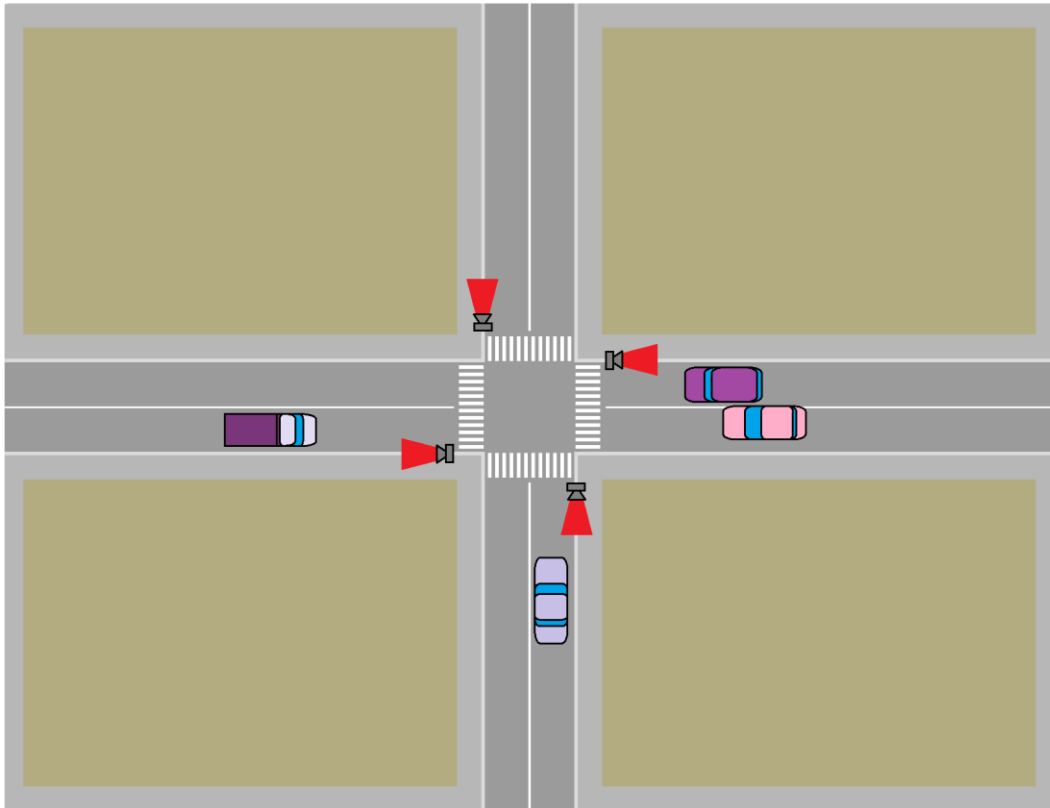
Middle

The driver of the purple car notices the inappropriate behavior of the driver of the pink car, but there is nothing he can do about it cause of no time for an action
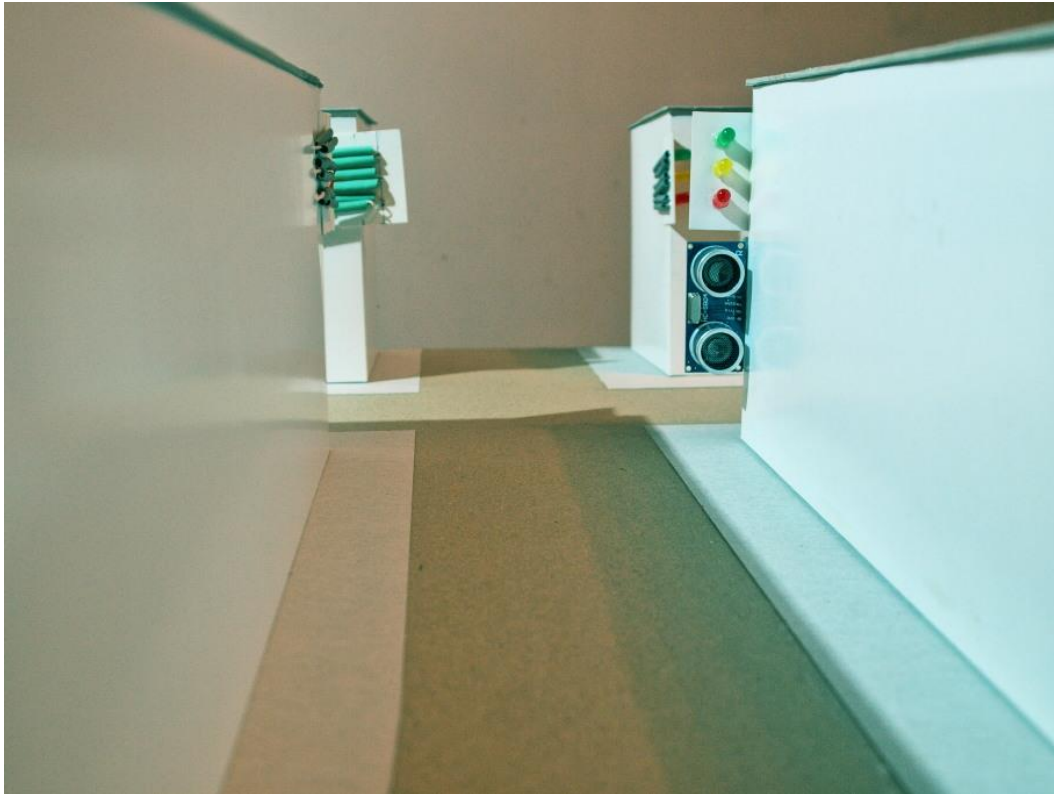
Falling action

We do not know if the drama turned into a tragedy, but in order not to be played by amateur actors, the entire fee will be received by car mechanics and policemen with medics and, perhaps, some other specific services

Solution

In case of inappropriate behavior of one of the traffic participants, the traffic light turns on the red light for all traffic participants

Check of the workability

The working algorithm of the smart traffic light was tested on the current layout of the intersection

Public demonstration

The demonstration of the project was quite successful

Conclusion - 1

By equipping the traffic light with means of automatic traffic control we can transform it into a warning device all movement participants about the probable occurrence
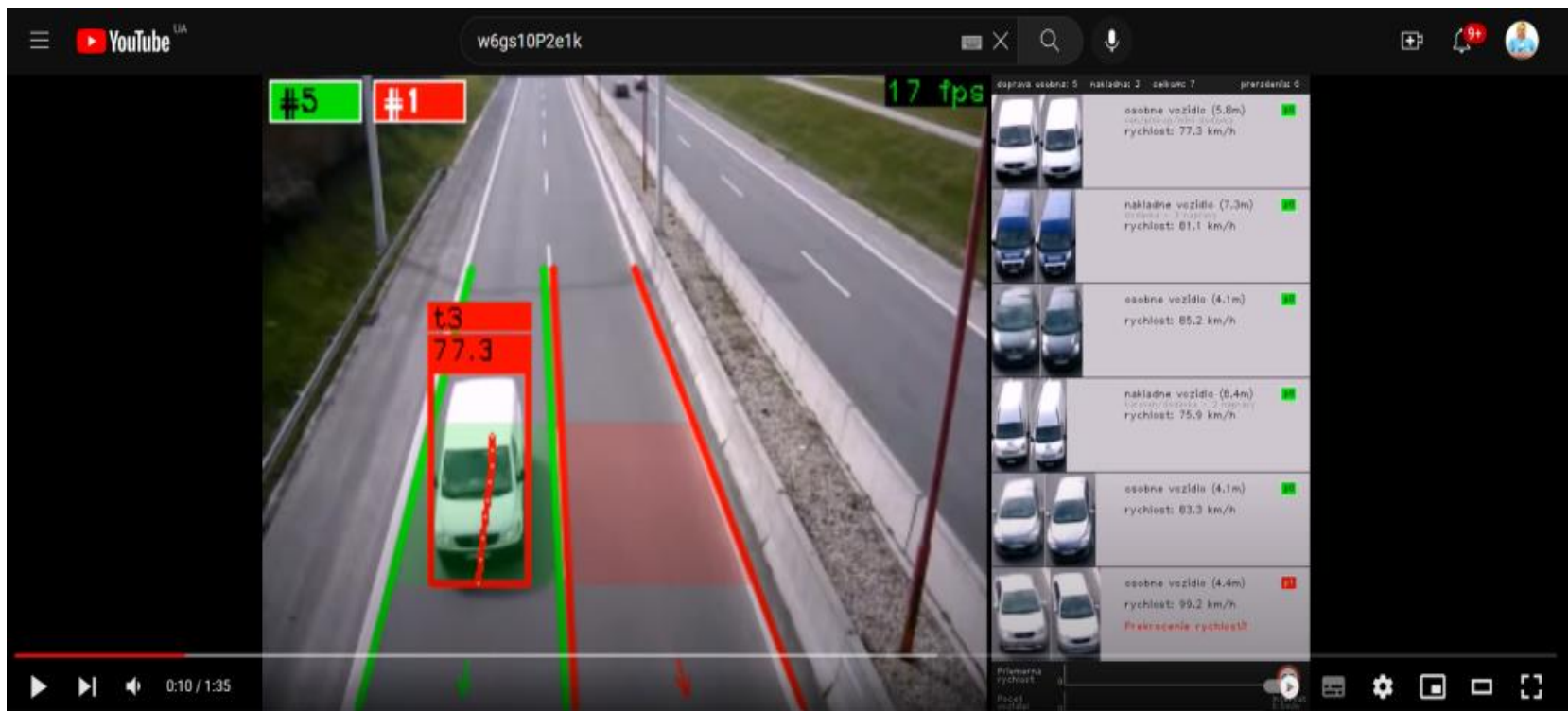
Conclusion - 2

All tests on models showed the
full functionality of the new traffic
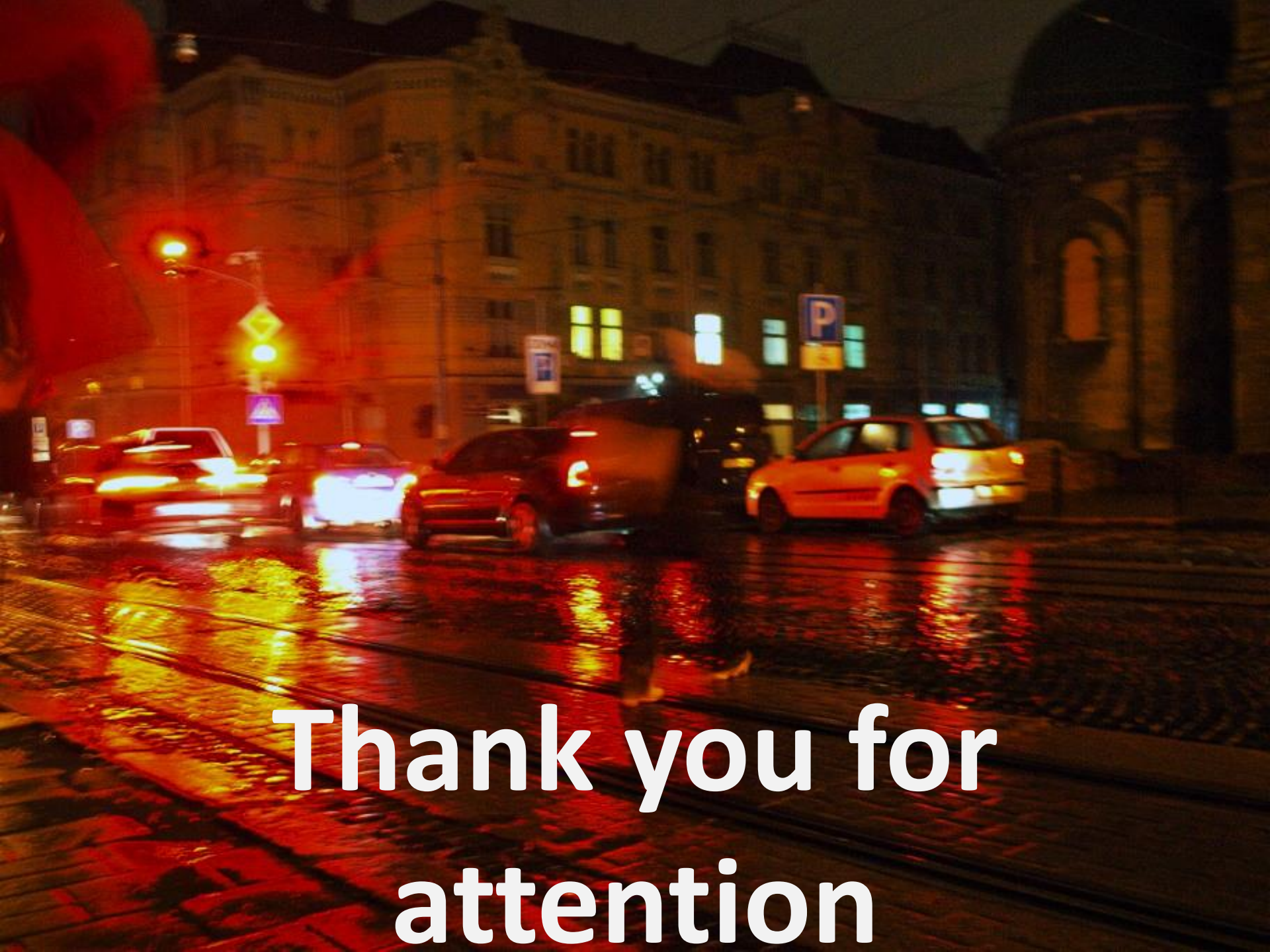light algorithms

Conclusion - 3

Without particular problems, all existing traffic lights can be retrofitted with the control and warning option

Posibilities

Combining separate systems
into a single complex

Automated Traffic Surveillance System - Video #1

Thank you for attention