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TRAFFIC CONFLICT TECHNIQUES IN CZECH REPUBLIC

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1. INTRODUCTION

Monitoring of traffic conflicts in the Czech Republic is less traditional method of monitoring traffic. This is a monitoring and evaluation of conflict situations in real traffic. A well accepted definition of traffic conflict is "an observe situation which two or more road users approach each other in space and time to such an extent that there is a risk of collision if their movements remain unchanged" [2].

2. TRAFFIC CONFLICT TECHNIQUES

The method of traffic conflicts is in comparison with the traditional identification of safety from traffic accidents time and financial more efficient. But in Czech Republic there is not consistent methodology for monitoring of traffic conflicts yet. View of project KONFLIKT ("Methodology for monitoring and evaluation of traffic conflicts in the Czech Republic") is to create a practical tool for assessing road safety in the Czech Republic. On the project are working together CTU in Prague, Faculty of Transportation Sciences and Transport Research Centre. The task on project will take three years and will consist of several parts of research (literature search, pilot observation, creation methodology for observation of traffic conflicts).

2.1 LITERATURE SEARCH

Traffic conflict techniques (TCT) are used more then 40 years in the world. In the literature search we came out of two quid from USA from Mr. Parker and Mr. Zegeer: [3 and 4] from 1986 – 1988 , there is focused on monitoring of traffic conflicts on the basic types of level crossings.

2.2 CONFLICT SEVERITY

For the TCTs purposes three levels of conflicts have been defined.
For the complex analysis of the studied locality even so called
level 0 and level 4 can be monitored. Thus there are 5 levels altogether (Figure 1).

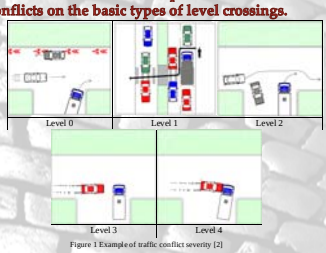

Figure 1 Example of traffic conflict severity [2]

2.3 TRAFFIC CONFLICT SUMMARY – PRESENTATION

Once observations are completed, data must be reduced and summaries
prepared. Results are presented either in summary tables or in traffic conflict diagrams.
As a result of traffic conflicts survey has been chosen simple relative index k_R .(1)

$k_R = (P_{kv}/I) \times 100$ [conflict situations /100 reduction vehicles] (1)

where: k_R: relative index
P_{kv}: conflict situations per hour (only conflicts of levels 1 – 3)
I: traffic volume rv/h (reduction vehicle per hour)

3. PILOT OBSERVATION OF CONFLICTS

For pilot observation was chosen two intersections. There were used for monitoring two subjective methods: manual observation and video analysis. Situation was monitored in place by both methods at the same time. The purpose was to compare both approaches and their advantages and disadvantages (calibration).

3.1 INTERSECTION IN BRNO

Pilot observation will be shown on traffic light controlled intersection in Brno [Figure 3 and 4]. In this intersection there are all types of transport (individual and mass transport include tram, pedestrians, and cyclists). The observation conducted in peak hour by two independent teams of observers who used two methods (manual observation and video analysis).
In both methods were observed most frequently traffic conflict by
- leaving intersection – opposing left-turn
- pedestrians crossing on red light
- lane – change conflict
- cyclist on pedestrian crossing.

Observation conclusions of both methods were slightly different in number of conflict and their conflict severity, but basic types of conflict were diagnosed equally.

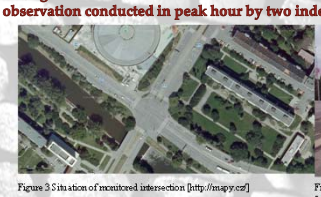
Figure 3 Situation of monitored intersection [http://mapy.cz/]


Figure 4 Traffic at monitored intersection [photo author]

3.2 CONCLUSIONS OF PILOT OBSERVATION

For pilot observation were chosen two intersections, in Brno and in Ostrava.
Both intersections were followed with two subjective methods – manual observation and video analysis. Method comparison showed
- serious situation were ever registered
- slightly different were in number of conflict and their conflict severity


Figure 5 Results of observation in Brno

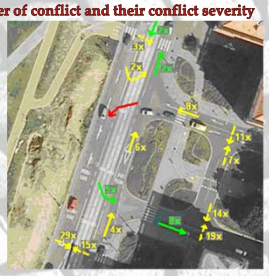
Figure 6 Results of observation in Ostrava

The using of both methods is applicable, main importance should be placed on training observes.
Results of pilot observation are presented in traffic conflict diagrams (Figure 5 and 6). The color of the arrows indicates increasing conflict severity. Yellow indicates conflict level 1, green conflict level 2 and red conflict level 3.

4. CONCLUSION

The main conclusions of pilot observation are consistent with recommendations of literature search
- serious situation while watching are ever registered
- for reliability observation is necessary thorough training of observes including validation observation.

In next phase of project there will continue further observation on various selected locations. Main aim of project "KONFLIKT" is to obtain sufficient documentation to create consistent methodology for monitoring of traffic conflicts in Czech Republic.

ACKNOWLEDGEMENTS

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