VIONA: Video Identification and Online Analysis for Traffic Flows

Traffic counts and traffic flow analyses are valuable foundations for traffic planning activities and form the basis for a wide range of telematic and traffic safety applications. AIT Austrian Institute of Technology and our partner EBE Solutions have therefore developed a low-cost, high-quality and flexible system that enables real-time traffic counting and traffic flow analysis based on license plate tracking.

VIONA was designed for the low- and high-level road network. It provides counting station data around the clock to a central server via the mobile network which checks these for plausibility and evaluates them in a flexible and versatile manner. As a result, either continuous traffic flow analyses for regions, cities, municipalities, but also for demarcated public infrastructures such as airports, shopping centres, park & ride facilities, or for deriving a traffic situation report can be realized.
The license plate recognition software used makes it possible to sort vehicles by country and political districts. To maintain data protection, all license plates are immediately encrypted in a one-way procedure after being collected.

EVALUATION AND APPLICATIONS

VIONA delivers data in real time. The immediate analysis of traffic flows and travel times always provides an up-to-date traffic report and thus allows immediate control measures, such as the origin-specific derivation of the traffic based on time or traffic.

In addition, VIONA allows the use of awareness-raising measures, such as a type of "section control" on a local thoroughfare where the average speed can be shown as compared to the maximum speed limit.

Coupling the system with non-contact sensor technology also makes it possible to record the vehicle classes, cross-sectional speeds and the length of each vehicle.

Beside real-time applications which primarily provide on-site

information, well-founded longer-term evaluations based on data segments of discretionary size from the past are possible as well. Depending on the requirements, the raw data is processed into clear representations such as route sequences, daily, weekly, monthly or yearly charts.

Other applications include the survey of source, destination and through traffic, the back ways through residential areas or the toll evasion traffic, the degree of utilization of parking spaces and the length of stay in a measuring area.

SERVICES

- Provision of a mobile, flexible and cost-effective record-ing unit
- Qualitatively and quantitatively high-quality recording, identification and recognition of traffic to obtain relevant information
- Evaluation and output of information via a real-time interface
- Cost-effective online transmission of collected or evaluated data

REFERENCES

- Traffic data acquisition at the Vienna International Airport
- ROBBIE - optimisation of travel time at construction sites
- Surveys regarding the parking situation, congestions at junctions and driving restrictions for heavy goods vehicles
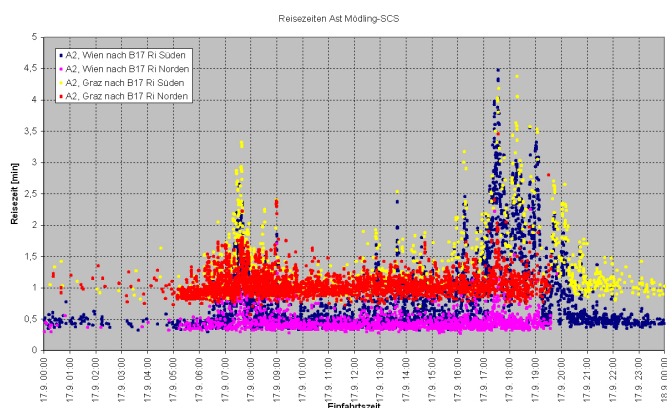
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