TRAFICON
TRAFFIC VIDEO DETECTION

PROJECT IN THE SPOTLIGHT:

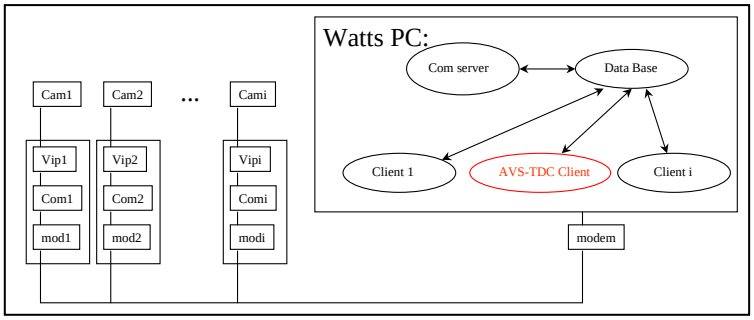
AVS-TDC
Advanced Video Surveillance – Time to Destination Calculation

A project within the EC - DGIII - Esprit HPCN TTN

The objectives of the AVS-TDC project (Oct. 1997 – Sep. 1998) were to show the potential of video detection as input :

- to predict travel time,
- to detect incidents within a queue and
- to determine the queue tail position.

Line following principle for speed measurement with video detection.



This project clearly demonstrates how video detection can provide information on:

- *expected travel time*
- *incidents within a queue*
- *queue tail position*

Five partners participated in the project:

- the 3 end users were the Ministry of the Flemish Community- EMA, Autostrade Firenze and BMW.
- Tritel, a transport consultant co-ordinated the committee of end users.
- Traficon co-ordinated the project as industrial partner.

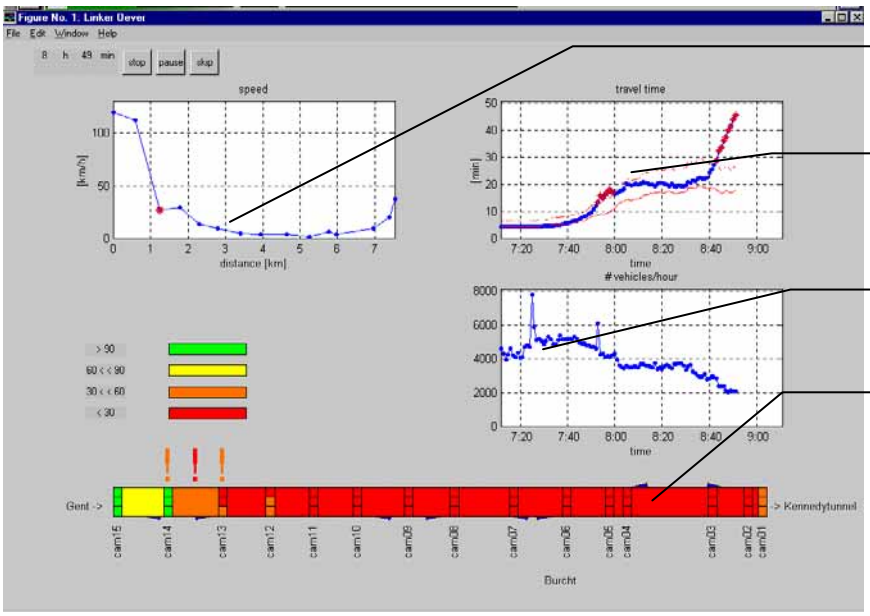
The pilot site was the frequently congested road stretch of 5km, equipped with 15 traffic data detector cameras, before the entrance of the Kennedy-tunnel in Antwerpen, Belgium.

At the heart of the resulting TDC application lies video image processing for accurate flow speed measurement (down to 0 km/h) in all traffic conditions from fluid traffic to queue.

The TDC algorithms use this flow speed to calculate the expected travel time and to determine the queue tail position.

The application functions within a client-server architecture with the WATTS (Wide Area Traffic Telematics Server). Output is presented in a graphical user interface on PC.

Graphical user interface on PC presenting output of the AVS-TDC application



traffic flow speed

expected travel time

traffic volume

graphical presentation of level of service with expected travel time and queue tail position

The end result of the project is a PC client software that shows the output of the system, i.e. the graphical representation of both travel time and a queue tail position on the site.
As a client, the application fits into a total concept of traffic data handling:

- Camera images are processed by the video detector
- Data & images are transmitted to the server via a COM board
- The output is presented by a specific graphical client software for different kinds of applications.

This concept is already operational on several sites world-wide. The TDC application is a valuable, ready-to-use tool that fits well into a complete incident detection and management system due to its modular concept.
The essential information is presented in a basic format that can serve as input for several types of broadcasting media (e.g. VMS, Internet).

SYSTEM AT A GLANCE

15 VIP2
for standard traffic data acquisition (such as volume, speed and length class)

WATTS PC Software
for controlling communication with sensors & database storage

AVS-TDC client

Current VIP/D replaces VIP2

Summary of the results & benefits of the project

- Accurate and reliable low speed measurement down to 0 km
- Classification of queues (accident or daily queues) based upon the pattern of travel time data
- User-friendly software solution for a pro-active traffic flow management
- Successful integration into existing surveillance systems & communications networks of road authorities

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THE PROJECT IS A JOINT REALISATION OF THE MINISTERIE VAN DE VLAAMSE GEMEENSCHAP-EMA, AUTOSTRADE FIRENZE, BMW, TRITEL & TRAFICON WITH PARTIAL FUNDING BY THE EUROPEAN COMMISSION.

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