



## PROJECT IN THE SPOTLIGHT:

### AID Verona A4-A31 Highway from Brescia to Verona, Italy

In November 1998, the Motorway Company "Autostrada Brescia Verona Vicenza Padova" decided to perform an evaluation on a limited scale for a system of central management and image processing (AID) on a 33 km stretch between Brescia & Verona of the highways A4 – A31 in Italy.

They selected Project Automation, a major traffic system integrator in Italy, closely co-operating with Traficon to co-ordinate this project.



The system offers both alarm text & position indication.



The truck backs up to the exit and causes an alarm (INV DIR:1).

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The number of false alarms per camera & per day (or false alarm frequency) is very low, not even 0,2 alarms per camera per day.

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In the survey, 12 fixed B/W cameras are involved, unevenly distributed over 6 postings on the road stretch. The average height is 15 metres. The length of the field of view is 400 metres (or more). The video signal is transmitted to the traffic control centre where it is processed by the detection equipment.

The AID system (Automatic Incident Detection) uses 2 Video Image Processing units (VIP41–VIP22) in parallel per camera.

The VIP22 uses a proprietary algorithm to measure the mean flow speed over the detection lines. Based on these measurements, alarms are produced for following actions:

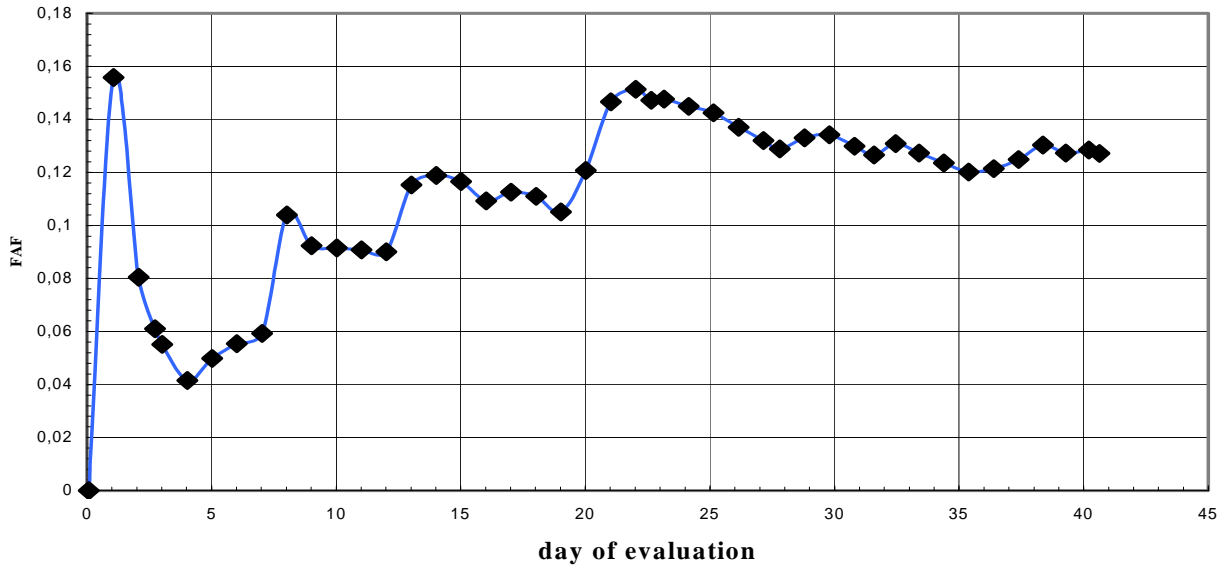
- *wrong way drivers*: When a vehicle drives in the wrong direction an alarm is triggered within seconds.
- *speed drop*: When speed drops under normal traffic conditions, an alarm is triggered.
- *queue formation*: The system derives 4 levels of service (types of traffic ) from the traffic flow data.

The VIP41 uses the difference between the dynamic background and the current image to detect following action:

- *stopped vehicles outdoors*: on the highway and hard shoulder

A management system, provided by Project automation handles the presentation of the alarms to operators at the traffic control centre.

## False alarm frequency



**FAF** : False alarm Frequency (per day and per camera)

**False alarms** : Alarms that shouldn't have been triggered based on the predefined parameters.

The survey has demonstrated the capabilities of the system and has led to some interesting observations not witnessed before or only to a lesser degree.

The number of false alarms per camera & per day (or false alarm frequency) is very low, not even 0,2 alarms per camera per day (see figure above).

As a further step in the process, efforts have been made to classify the alarms. The objective is to ensure that the system continues to provide all alarm data, but only notifies the operator in case of relevant events.

### SYSTEM AT A GLANCE

12 VIP22  
Flow monitoring & queue detection

12 VIP41  
Stopped vehicle detection outdoors

*current VIP/I replaces VIP41 & VIP22*

Because of the excellent results, the motorway authorities have decided to proceed this project with the complete installation of 83 cameras.

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FOR MORE INFORMATION, PLEASE CONTACT MR. STEVE COLLINS - TRAFICON ([SC@TRAFICONFRANCE.COM](mailto:SC@TRAFICONFRANCE.COM)).  
THE PROJECT IS A JOINT REALISATION OF THE AUTOSTRADA BRESCIA VERONA VICENZA PADOVA,  
PROJECT AUTOMATION & TRAFICON.

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