

## PROJECT IN THE SPOTLIGHT:

### AID Huguenot-tunnel between Capetown and Worcester, South-Africa



On request of the customer the existing loop detection system in the Huguenot-tunnel, a toll tunnel, was replaced by an automatic incident detection (AID) system with VIP23 and VIP41.

The Huguenot-tunnel is a two-lane carriageway of 3913 metres. There is two way, leftside driving traffic. The main control centre is 6 km from the nearest end of the tunnel (Western portal, Capetown).

The AID system (13 cameras) stands apart from the CCTV system.



The main function of the Video Based Traffic Monitoring System (VBTMS) is the detection of traffic flow events within the tunnel and its approaches.

It consists of VIP modules, a communication module & the WATTS PC-software.

The video signals of the 13 cameras in the tunnel are fed into the VIP modules in the control centre.

The AID system provides video image processing to detect following conditions:

- ✓ Stopped vehicles
- ✓ Slow moving traffic
- ✓ Traffic queues
- ✓ Overspeed
- ✓ Wrong-way drivers

- In tunnel sections, a VIP23 provides detection of stopped vehicles & queues and flow monitoring.
- At the tunnel portals outdoors, a VIP41 and a VIP2 are combined per camera.
  - ✓ VIP41 handles the stopped vehicle detection.
  - ✓ VIP2 provides standard traffic data collection (such as volume, speed, length class).

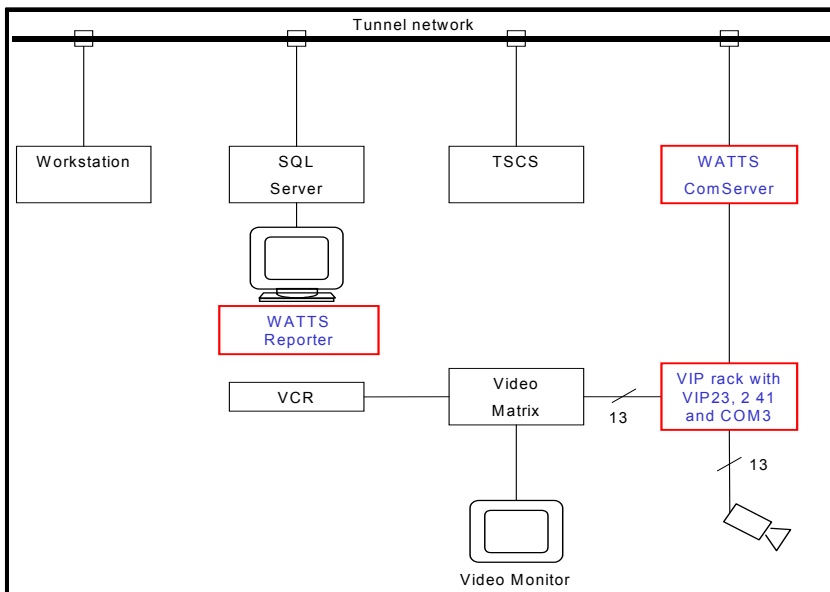
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Alarms are generated when a vehicle stops on the predefined zones or when a queue is detected in one of the predefined detection zones.

## SYSTEM AT A GLANCE



### 2 VIP2

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

### 2 VIP41

for stopped vehicle detection

### 11 VIP23

for flow monitoring, queue and stopped vehicle detection indoors

### 1 COM3

for communication between rack systems and central host PC

### WATTS PC software

for controlling communication with sensors and database storage

*current VIP/D replaces VIP2  
current VIP/I replaces VIP41 & VIP23*

A client-software accesses the WATTS database via a TCP/IP port on the tunnel network and provides the necessary commands to the Tunnel Supervisory & Control System (TSCS). The TSCS then provides following data :

- alarm input information for the traffic control system
- traffic flow data for live displays on operator selected mimic screens.

The TSCS mimic screens available to the operator are:

- Speed Profile mimic (with flow speeds for both directions in a bar-chart format)
- Portal Traffic Data mimic (with flow data in numerical tabular format)

All traffic flow and alarm data stored in the WATTS Database can also be accessed on request by the WATTS Reporter software on a PC within the TCP/IP network. The traffic plans within the TSCS are pre-programmed to react to alarm events reported by the VBTMS and automatically informing the operator. Outputs from the TSCS when responding to alarms are:

- associated camera/VIP icon on mimic screens to alternate red/yellow flashing
- traffic lights to danger
- VMS to display appropriate message and speed limit signs to reduced speed limit

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THE HUGUENOT-TUNNEL PROJECT IS A JOINT REALISATION OF THE NATIONAL ROADS AGENCY (DAVE GRAY) NV, VKE  
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