TRAFICON
TRAFFIC VIDEO DETECTION

VIP-T

VIDEO DETECTION AND DIGITAL ENCODING FOR TRAFFIC CONTROL

ALL-IN-ONE VIDEO DETECTOR WITH INTEGRATED MPEG-4 COMPRESSION

TUNNEL

ROAD

BRIDGE

VIP-T is a multi-functional Video Image Processing module for traffic control. VIP-T integrates automatic incident detection, data collection, presence detection, digital recording of pre and post incident image sequences and streaming video in one board.

Features

- ✓ IP-addressable video detector with high quality MPEG-4 compression on board
- ✓ Wide range of events: stopped vehicle, inverse direction, pedestrian, speed drop, traffic congestion, underspeed, overspeed, fallen object, smoke in tunnel
- ✓ Traffic data: flow data, integrated and individual vehicle traffic data
- ✓ Technical alarms
- ✓ Automatic recording of image sequences, pre and post incident
- ✓ Streaming video over IP (RTSP) at full frame rate

Benefits

- ✓ High detection rate, minimum detection time and low false alarm frequency
- ✓ Field proven detection, fast and reliable
- ✓ Easy to install, high MTBF and low MTTR
- ✓ Fast, user-friendly and modular setup
- ✓ For fixed and PTZ cameras (PAL or NTSC), new or existing infrastructure

POWERFUL and COST-EFFECTIVE SOLUTION
For AUTOMATIC INCIDENT DETECTION,
DATA COLLECTION and PRESENCE DETECTION
Including STREAMING VIDEO FUNCTION

MPEG-4 Compression and Video Detection integrated in one board

With VIP-T Traficon® continues its reference role in video detection solutions for traffic control. The image processing algorithms from Traficon® result in highly reliable systems with fast detection.

The VIP-T system provides a powerful and cost-effective solution for a wide range of traffic management applications, such as rerouting, travel time calculation or dynamic speed indication.

Scalable System with Open Architecture and Modular Setup

VIP-T has been developed to deliver automatic incident detection in tunnel or outdoors, traffic data collection or vehicle presence detection in combination with streaming video over IP for centralised and decentralised systems.

Its open architecture and modular setup provide you with a scalable and expandable system.

AUTOMATIC INCIDENT DETECTION, TRAFFIC DATA COLLECTION and VEHICLE PRESENCE DETECTION

Relevant traffic data and incident detection information for state-of-the-art traffic supervision and management

Video images from standard cameras serve as the input for VIP-T. Different image processing algorithms run in parallel in order to deliver a multi-functional detector board. VIP-T allows selecting the required functions, depending on the application or relating to (the limitations of) the camera position.

The result is a scalable and easy upgradeable system where the video detection functions and MPEG-4 compression can be used independently.

The images below illustrate the automatic incident detection and traffic data collection function.

VIP-T generates relevant traffic data and incident detection information for traffic supervision or management. The analysis of the camera image results either in traffic data or in an event when an incident is detected. VIP-T also gives non-traffic events and technical alarms.

The table below provides an overview of all possible events, alarms and types of traffic data generated by VIP-T.

AUTOMATIC INCIDENT DETECTION

Traffic events

Stopped Vehicle
Inverse Direction
Speed Drop

Traffic Congestion
Levels of Service

Underspeed
Overspeed

Vehicle Presence

Non-traffic events

Smoke in Tunnel
Pedestrian
Fallen Object

Technical alarms

Bad Video
Camera Movement
PTZ Camera out of Home

TRAFFIC DATA COLLECTION

Traffic flow data per lane

Traffic Flow Speed
Zone Occupancy

Integrated vehicle traffic data

Volume (count) and Average Speed per vehicle class per lane, Headway
Gap Time per length class per lane
Occupancy, Density and Vehicle Length per lane

Individual vehicle traffic data

Speed, Gap Time, Headway, Confidence Level
Vehicle Classification

ON BOARD MPEG-4 COMPRESSION

Real-time streaming video over IP

Using MPEG-4 video technology for compression, VIP-T provides real-time streaming video over a network to display live or on demand. VIP-T uses Real Time Streaming Protocol (RTSP) for streaming video available at full frame rate.

A configurable resolution, bit rate and frame rate allow for optimum use of the available bandwidth.

Pre and post incident image sequences

VIP-T uses MPEG-4 compression for digital recording of pre and post incident image sequences. Incidents detected by VIP-T automatically trigger the recording process.

COMMUNICATION OF TRAFFIC DATA, EVENTS, ALARMS and VIDEO IMAGES

Transfer to the traffic management system over the network in real-time and based on the TPC/IP protocol

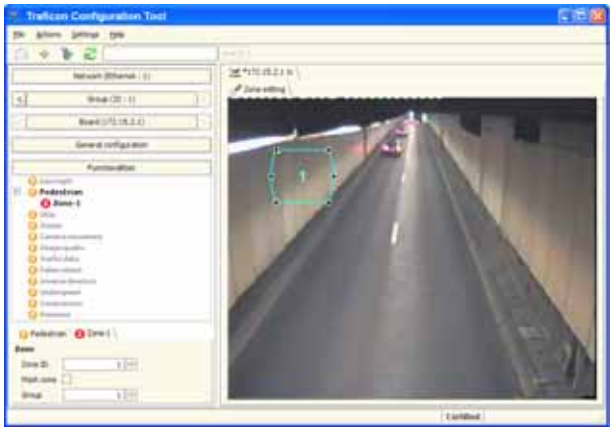
All traffic data, events, alarms and video images generated by the VIP-T board are sent to the Traficon® management system, TMS. The TMS server stores data, events and alarms in a relational database. Real-time data are available from a TCP/IP socket.

The open architecture of the VIP/TMS system allows an easy integration into any larger traffic management system.

USER-FRIENDLY REMOTE SETUP via multilingual PC Tool

A user-friendly PC tool allows remote setup of the VIP-T board and functional optimisation to the exact requirements of the project.

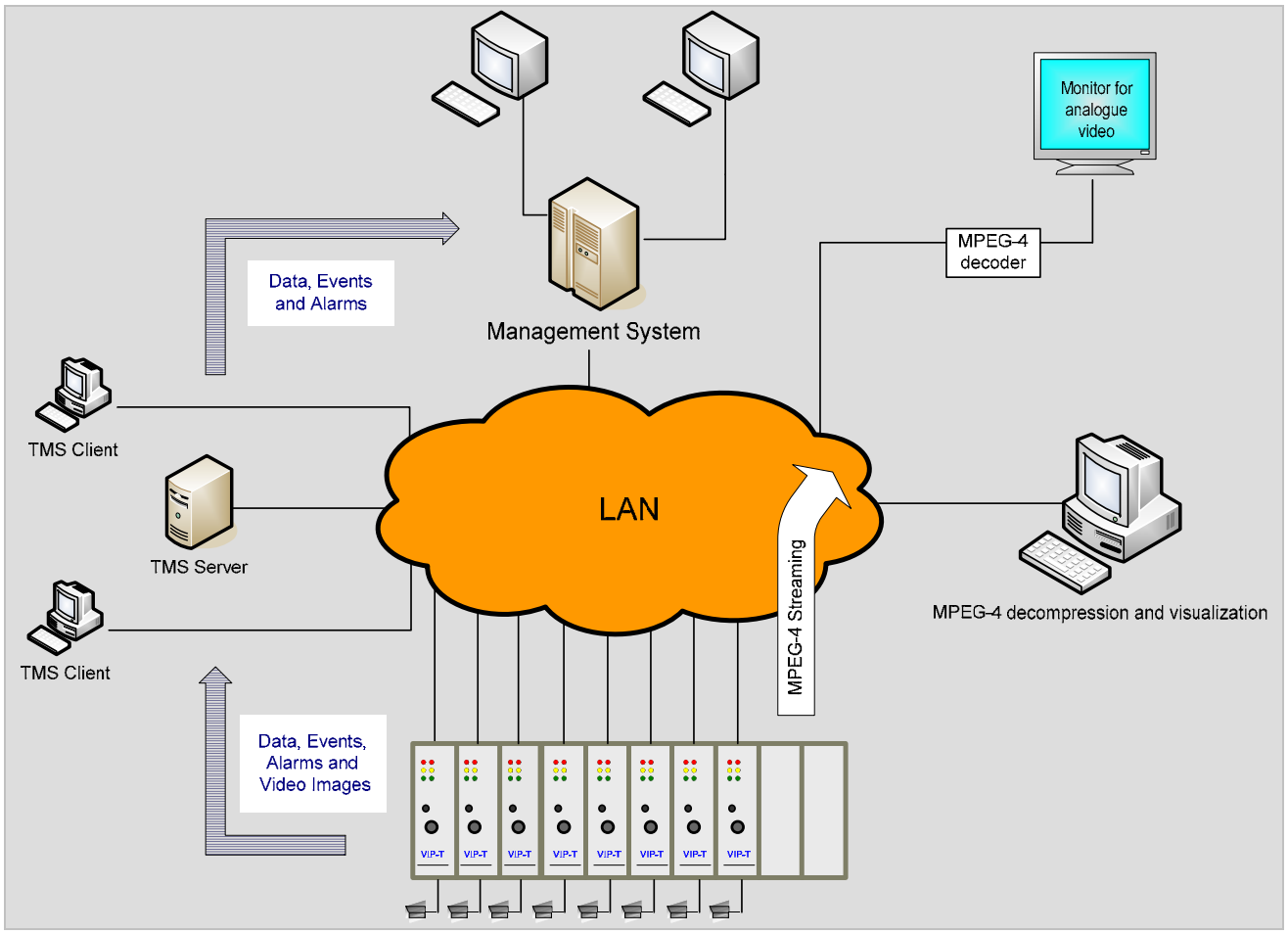
The straightforward graphical user interface enables the administrator to visually control zone editing and fine-tuning in order to obtain an efficient and reliable system with maximum performance.



Graphical user interface for the setup of VIP-T →

VIP-T SYSTEM ARCHITECTURE

Industrial Setup for a Centralised or Decentralised System



In a typical installation, the VIP-T boards are mounted into a standard Euro rack. A VIP-T I/O Expansion board may provide extra inputs and outputs for all VIP-T boards in the rack.

Transfer of all traffic data, events, alarms, video images and streaming video in a centralised system is done over the network in real-time to any PC with TMS, Traficon®'s software platform for traffic management. TMS is a standalone management solution but can be integrated into a larger traffic management system also.

MPEG-4 streaming video can be viewed from any connection point on the network. Analogue video is available directly from the VIP-T board or over the network via a MPEG-4 decoder.

The modular and network based architecture allows for a scalable system, expandable and upgradeable to meet the exact project requirements.

VIP-T hardware

- ✓ Full or half 19" rack housing or VIP-T box
- ✓ Hot swappable VIP-T board
- ✓ High MTBF and low MTTR
- ✓ Digital input and outputs on VIP-T for decentralised use
- ✓ Din-rail clickable I/O board for extra inputs and outputs

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