Intelligent Transportation Systems
Video Detection and Monitoring Solutions
for Traffic Applications
Video Detection and Monitoring Solutions for Traffic Applications

Traffic managers all over the world use technology from FLIR Intelligent Transportation Systems (formerly Traficon) to keep roadways flowing safely and smoothly. They utilize FLIR ITS to control signals for vehicles, pedestrians, and cyclists; detect incidents on roadways; and collect valuable traffic data.

By combining video cameras, thermal sensors, intelligent video analytics, and command and control software, FLIR ITS has the field-proven solution you need to keep your roadways safe and running at peak efficiency.

Key Benefits of Video Detection
- Above-ground detection
- Combination of data, alarms and video images
- High reliability
- Flexible configurations
- Wide-area detection
- No road closure needed for installation and configuration
- Low maintenance cost

Traditional video cameras, as well as thermal cameras, can be combined with FLIR’s traffic video analytics.
Real-time Analysis
Real-time analysis of video or thermal camera images allows for more efficient traffic management in tunnels, on highways and in urban areas. Traffic lights can be adapted in real-time, according to the current traffic flow. And in case of incidents, early detection enables fast intervention of rescue teams and prevents secondary accidents.

Video Detection - Seeing is Believing
The combination of both numerical data and a visual image sets video detection apart from all other detection systems. The immediate visual feedback received from a video detection system on a monitor is invaluable for the traffic manager or operator.

Having a visual image of the situation also allows the traffic manager to assess what is happening and to take appropriate action.

Cost-Effective
Video detection systems for monitoring traffic streams are a very cost-efficient solution. All cameras can be easily installed above ground on existing infrastructure, mast arms, luminaires, or existing poles. Since nothing needs to be installed into the road surface, there is no need for road closures or other disturbances. Detection zones can be easily moved or adapted if the traffic situation changes.

Efficient and Reliable
FLIR Systems’ video detection and monitoring systems are used all over the globe. Traffic managers appreciate their high incident detection rate and high detection speed. This results in a low Mean Time to Detect (MTTD) and a low False Alarm Rate (FAR).

Proven Technology
Traffic managers worldwide have embraced the technology from FLIR Intelligent Transportation Systems for managing traffic streams. More than 100,000 video detectors are operational worldwide in over 70 countries.

FLIR has Automatic Incident Detection (AID) installations in more than 600 tunnels, totalling more than 750 kilometers of roadway.

In addition, FLIR solutions are being used for traffic light management at more than 20,000 intersections worldwide.
Intersection Control

FLIR’s video and thermal detection solutions create a highly reliable and accurate alternative to loops and other detection technologies, providing information on vehicles approaching or waiting at intersections.

Vehicle and pedestrian detectors from FLIR Systems turn traffic lights into active management devices.

FLIR’s intelligent intersection control reduces vehicle wait times, improving traffic flow and efficiency, reducing CO2 emissions, and enhancing the safety and mobility of more vulnerable road users.

Pedestrian Safety and Mobility

Pedestrian safety is a major concern in urban areas. In addition to traffic light management, pedestrian detection can activate in-road warning lights or flashing beacons. Compared to continuously flashing lights, detection-based warning signal activation is much more effective in alerting motorists and enhancing the safety of pedestrians.
Bike Detection
Detecting cyclists on busy roadways and intersections in difficult conditions is one of the greatest challenges facing traffic engineers today. Because they utilize both thermal sensors and video analytics, FLIR’s thermal detection systems provide the most reliable detection and notification system in the world.

As more and more state and local municipalities are requiring safe, reliable detection of cyclists in order to effectively work them into the overall flow of traffic, FLIR’s bicycle detection systems are quickly becoming required technology.

Highway Monitoring
As more vehicles clog major arterials around the country, effective 24-hour monitoring of these highways becomes a critical feature in the continuing efforts to keep cars and trucks moving smoothly.

FLIR’s integrated visual cameras, thermal sensors, and management software solutions give agencies the information and horsepower they need to detect and respond to incidents with minimal disruption of traffic flow and commerce.

Automatic Incident Detection (AID)
Effective incident management depends entirely on fast incident detection and verification.

With each passing minute, the risk of another accident compounding the first one rises dramatically, making the time to clear the original incident critical.

Stopped vehicles, wrong-way drivers, lines of waiting cars, slow moving vehicles, or fallen objects...FLIR’s AID solutions analyze camera images in real-time and detect major incidents within seconds, substantially reducing the risk of secondary incidents.
Data Collection & Flow Monitoring
FLIR Systems accurately monitors traffic flow speed to help keep highways safe by differentiating levels of service: fluid, dense, congested, or stop and go. Lines of waiting traffic in construction zones can be monitored and travel times calculated based on information gathered by FLIR’s Video Image Processor (VIP) boards.

Parking
Having a bunch of drivers circling endlessly trying to find parking keeps more cars on the road longer than necessary. FLIR’s parking cameras, sensors, and solutions provide an easy to use method for drivers to find open parking areas and for operators to see what their capacity is at any given time.
While video cameras are traditionally used for traffic video analysis, they need additional algorithms to overcome their inherent vulnerability to low light conditions (nighttime), too much light (sun glare), and shadows that can hide vehicles or pedestrians.

Thermal sensors do not have any these issues. Because they create a crisp image based on subtle temperature differences, thermal sensors need no light to work, are not blinded by direct sunlight, and give you uninterrupted 24-hour detection of vehicles, pedestrians, and cyclists, regardless of the amount of light available.

Sun Glare

Glare from the sun blinds conventional video cameras, effectively hiding vehicles, people, and animals. Thermal sensors cannot see this glare, and only respond to the heat signatures they detect.

Headlights

Headlights are confusing to video cameras, tricking them into triggering false and missed calls, and making accurate observation of highway traffic at night impossible. Thermal sensors are immune to headlight glare, so they see clearly.

See Through Shadows

Video cameras can miss pedestrians, cyclists, animals, and even cars if they’re in the shadows. But since thermal sensors see heat, not light, they give you a much more reliable detection solution.

Long-Range Night Viewing

At night, a highway looks like an indistinct row of lights to a video camera, making meaningful data collection and incident assessment impossible. But thermal cameras see the heat signatures of vehicles clearly from miles away, while also providing clear video of the roadside so you can see vehicles that have pulled over.
Thermal Sensors for Signal Control & Traffic Monitoring

Thermal sensors outperform other detection technologies by detecting the heat signatures given off by everything in their field of view, 24/7. Because they see heat, not light, they don't get confused by sun glare, darkness, headlights, shadows, wet streets, and poor weather conditions like video cameras do.

Detection systems using thermal sensors have dramatically fewer false and missed calls, enable better signal timing, and more efficient traffic flow with increased safety than any other technology. Plus, thermal cameras also detect the heat from cyclists, pedestrians, and animals faster and more reliably.

FLIR FC-Series T

Compact, flexible, and powerful, FC-Series sensors provide the most reliable traffic detection technology in the field today. No other detection technology provides the same level of reliability or reduction in missed or false calls as thermal.

Detailed Image Quality

Using state-of-the-art, maintenance-free uncooled microbolometer detectors, FC-Series systems produce accurate images with great image detail. They are the perfect solution for analytics and traffic monitoring.

Different Lens Options

FC-Series sensors are available with a variety of different lens options: 9 mm, 13 mm, or 19 mm. Longer lenses offer a narrower field of view for greater detection ranges.

Easy to Install

FC-Series cameras use the same mechanical hardware, mounting arms, cabling, and processors that you already have. They also provide two methods for connecting the video output cable: BNC and Connector-Less.

Designed for Use in Harsh Environments

The FC-Series thermal sensors are rugged and reliable, meeting IP66 requirements against dust and water ingress. They operate between -50°C and +75°C, making them perfect for all climates.
FLIR's multi-sensor PT-Series and D-Series sensor systems expand the capabilities of Signal Control cameras by pairing a thermal sensor with an industry-standard CCD camera. These PTZ platforms give you:

- Precision pan/tilt mechanism for accurate pointing control
- Fully programmable scan patterns, radar slew-to-cue, and slew-to-alarm functions
- Simultaneous IP and analog video outputs
- IP and serial control interfaces for easy integration into IP or analog networks; use them in an existing analog environment, and migrate them easily to a future IP network
- Open IP standards for plug-and-play integration
- Streaming digital video available in H.264, MPEG-4, or M-JPEG formats

**PT-Series T**

The PT-Series of high-performance, multi-sensor pan/tilt cameras bring thermal and visible-light imaging together in a system that gives you video and control over both IP and analog networks. The precision pan/tilt mechanism gives you accurate pointing control along with:

- Sun-safe VOx uncooled thermal sensor technology; looking directly at the sun won’t damage FLIR uncooled thermal security cameras
- Fully programmable scan patterns, radar slew-to-cue, and slew-to-alarm functions
- Simultaneous IP and analog (NTSC or PAL) video outputs — thermal and visible light — along with IP and serial control interfaces for easy integration into IP or analog networks; use them in an existing analog environment, and migrate easily to a future IP network
- Exchangeable camera cassettes allow for quick upgrade or repair of sensors and optics
- Open IP standards for plug-and-play integration
- Streaming digital video available in H.264, MPEG-4, or M-JPEG formats

**D-Series T**

The D-Series outdoor dome enclosure provides precision pan/tilt control of the included thermal and daylight/low-light visual cameras. D-Series cameras give you:

- Sun-safe VOx uncooled thermal sensor technology; looking directly at the sun won’t damage FLIR uncooled thermal security cameras
- Fully programmable scan patterns, radar slew-to-cue, and slew-to-alarm functions
- Thermal imager with either 640 × 480 or 320 × 240 resolution
- Daylight/low-light 36× zoom color CCD camera
- Simultaneous visible and thermal video outputs
- Simultaneous IP and analog (NTSC or PAL) video outputs
- Open IP standards for plug-and-play integration
- Multiple channels of streaming digital video available in H.264, MPEG-4, or M-JPEG formats
- Auto Digital Detail Enhancement (DDE) for optimal image quality
- Compatible with industry standard lowering devices
The World’s First Intelligent Thermal Traffic Sensor

TrafiSense is an integrated thermal detection sensor and analytics package that gives you the power to detect vehicles and cyclists around the clock with industry-leading reliability.

TrafiSense is an above-ground system that spares you the enormous installation and maintenance costs that traditional inductive loops typically require. This makes TrafiSense as cost-effective as it is reliable while also giving you all the benefits of thermal video detection.

Key Functions
- Vehicle presence detection
- Bicycle presence detection
- Intersection control: Stop bar and advance detection

Key Benefits
- All-in-one sensor (thermal sensor + analytics)
- Above-ground installation
- Up to H.264 image compression
- IP-addressability
- Real-time verification and monitoring
- Easy installation and quick configuration
- Low power consumption
- Up to 16 vehicle presence detection zones
- Up to 4 bicycle presence detection regions
- Reliable detection 24/7
- Field-proven detection algorithms
Vehicle Presence Detection

TrafiSense detects and monitors moving and stationary vehicles at signalized intersections. By detection outputs and/or IP protocol, vehicle presence information is transmitted to the traffic controller so that signal timing can be adjusted dynamically. This results in reduced waiting time, improved traffic flow, and less pollution.

Bicycle Presence Detection

TrafiSense is also a reliable, cost-effective solution for the detection and monitoring of bicycles approaching a signalized intersection. Bike presence information is provided to the traffic controller so cyclists get optimized green times, enhancing the safety of cyclists and other road users.

Easy Installation & Configuration

TrafiSense is an IP-addressable thermal detection sensor, so system setup is quick and easy. Its flexible installation options include broadband over power lines (BPL). Using the setup software to connect to all TrafiSense devices on the network and position your virtual detection zones and regions quickly and accurately, your system can be operational in just a few minutes. Full frame rate streaming video for system and traffic monitoring lets you configure, view, and control the system both on-site and remotely.
The TrafiCam Series of vehicle presence sensors combines a CMOS camera and video detector together to make two specialized products:

- **TrafiCam**: vehicle presence sensor for standalone use
- **TrafiCam X-Stream**: vehicle presence sensor and data collector with video streaming

Both the TrafiCam and TrafiCam X-Stream sensors are used for detection and monitoring of moving and stationary vehicles at signalized intersections. Via detection outputs or via IP protocol, vehicle presence information is transmitted to the traffic controller so that signal timing can be adjusted dynamically. This way, vehicle waiting time at traffic lights is reduced and traffic flows are optimized. The smart TrafiCam sensors are a cost-effective and reliable alternative to inductive loops.

**Direct Visual Verification of Presence Zones**

The TrafiCam series allows you to exactly position and verify the vehicle presence detection zones. Since these zones are displayed on a video image, you can easily reposition them to adapt to changing traffic situations.

**Multiple & Direction-Sensitive Vehicle Detection Zones**

TrafiCam and TrafiCam X-Stream detect vehicles, day and night, in up to 16 zones. This allows vehicle presence detection over different lanes. The TrafiCam series has detection zones indicating presence of vehicles moving in a specific direction.

**Easy Installation, Fast Configuration**

TrafiCam is easy to install. You can simply mount it on existing infrastructure.
TrafiCam X-Stream offers a number of additional capabilities over the standard TrafiCam sensor.

Video Streaming
Stream full frame rate video with MPEG-4 or H.264 compression for seamless system and traffic monitoring directly from your control room. Its user-friendly web interface allows TrafiCam X-Stream users to manage their video sources online.

Traffic Data Collection
TrafiCam X-Stream is also a cost-effective solution for traffic data collection (volume, speed, occupancy, gap time, headway and classification on multiple lanes), queue detection and traffic flow monitoring on highways and inter-urban roads. It can be used for temporary data collection or on a more permanent basis.

### TrafiCam Series

<table>
<thead>
<tr>
<th></th>
<th>TrafiCam</th>
<th>TrafiCam X-Stream</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Camera</strong></td>
<td>CMOS black &amp; white</td>
<td>CMOS color</td>
</tr>
<tr>
<td><strong>Data streaming</strong></td>
<td>Single image</td>
<td>MPEG-4 or H.264</td>
</tr>
<tr>
<td><strong>Direction sensitive detection zones</strong></td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Vehicle detection zones</strong></td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td><strong>Data collection</strong></td>
<td>no</td>
<td>up to 4 lanes</td>
</tr>
</tbody>
</table>

**Key Functions:**
- Vehicle presence detection at intersections
- Data collection (TrafiCam X-Stream only)

**Key Benefits:**
- All-in-one sensor (camera + video detection)
- Non-intrusive, above-ground installation
- Real-time verification and monitoring
- Real-time traffic view

TrafiCam is an esthetic product that combines a CMOS camera and video detector in one. It is the ideal tool for intersection management in urban areas.
C-Walk/SafeWalk

FLIR ITS pedestrian sensors are improving safety and efficiency in urban areas all around the world. Detection of pedestrians allows for the dynamic control of traffic lights and warning lights, such as flashing beacons or in-road lighting. The result? More safety, and fewer delays for both pedestrians and motorists.

FLIR ITS pedestrian sensor portfolio offers integrated solutions, combining a camera and detector in one:

- C-Walk: detection of crossing pedestrians
- SafeWalk: detection of waiting and approaching pedestrians

FLIR ITS C-Walk and SafeWalk sensors make use of predefined detection zones ("virtual loops"). As soon as a pedestrian enters the predefined zone, a detection output will trigger the traffic light controller or activate a warning signal.

Pedestrian Detection for Traffic Light Control

Crossing at signalized intersections can be dangerous for pedestrians. C-Walk and SafeWalk sensors can reduce the risk and enhance safety by adapting traffic light green times based on pedestrian presence information. C-Walk and SafeWalk also significantly reduce wait time for both pedestrians and motorists.

Pedestrian Detection for Activation of Warning Lights

Warning lights are very effective in enhancing driver awareness and reducing risks for pedestrians. However, traditional, continuously flashing warning signals will have a reduced effect, as motorists do not receive any real stimulus to change driving behavior. C-Walk and SafeWalk are more effective, because they activate warning lights, such as in-road lighting or flashing beacons, only when pedestrians enter a predefined detection zone.

Main Benefits:

- All-in-one sensors (camera + detector)
- Above-ground installation
- Accurate zone positioning
- IP-addressable
- Reliable detection 24/7
- Cost-effective solution
C-Walk - Pedestrian Presence Sensor

C-Walk is designed to improve pedestrian protection.

SafeWalk - Stereovision Pedestrian Presence Sensor

SafeWalk has been designed to detect stationary pedestrians adjacent to the pole on which it is mounted.

Fast & Easy Installation

SafeWalk and C-Walk sensors have been designed to avoid expensive installation and maintenance costs. As such, the installation process is quick and simple: install it, connect it and start analyzing the pedestrian detection zone. The sensors can simply be mounted on existing infrastructure.

User-Friendly System Configuration

Configuration of the sensor is done via portable PC with pre-installed user-friendly software. It takes less than five minutes and requires no special knowledge.

Using camera images, virtual pedestrian detection zones can be positioned accurately. Verification and viewing of the detection is possible via MPEG-4 streaming video.
**VIP Series - Video Detection Boards**

The VIP series offers multi-functional Video Image Processing modules for traffic control. These boards can monitor single or dual cameras and provide accurate data traffic volume, speed, gap-time, headway, occupancy, concentration, and classification. Data is stored on-board using non-volatile memory.

**VIP-3D.1**
- The VIP-3D.1 monitors one camera and provides up to 24 presence detection zones.

**VIP-3D.2**
- The VIP-3D.2 monitors two cameras and provides up to 20 presence detection zones.

**VIP-Bike**
- VIP-Bike provides bike detection, green time adaptation for cyclists, visual monitoring, and bike counting.

**Key Benefits**
- Instant operator warning, logging and recording of events, data and video sequences
- On-board digital recording of pre- and post-incident video sequences
- Extensive interfacing and reporting capabilities
- Field-proven video detection experience
- Fast and reliable 24/7
- Easy to install, trouble-free system integration
- High lifetime, low power, easy maintenance

**Stopped vehicle**

**Data collection**

**Inverse direction**

**Fallen object**
Automated Incident Detection

AID Boards and Camera

FLIR integrated boards and cameras provide automatic incident detection, data collection, recording of pre- and post-incident image sequences and streaming video in one board. VIP modules have been installed for road and tunnel projects all over the world.

VIP-T  VIP-IP  VIP-TX

Multi-functional video detection board for analog cameras  Multi-functional video detection board for network cameras  Video encoder with multi-functional video detection

TrafiBot

TrafiBot is a box camera with integrated video analytics and dual H.264 video streaming.

The TrafiBot solution combines field-proven video detection algorithms with advanced camera optics and powerful processing technology in a single housing. TrafiBot is a network camera that provides embedded AID analytics and multi-stream encoding that supplies traffic data and incident detection information alerts on stopped vehicles, wrong-way drivers, pedestrians, lost cargo, smoke, and traffic flow data.

<table>
<thead>
<tr>
<th>Description</th>
<th>VIP-T</th>
<th>VIP-IP</th>
<th>VIP-TX</th>
<th>TrafiBot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Video analytics module for analog cameras</td>
<td>Video analytics module for network cameras</td>
<td>Encoder with embedded video analytics</td>
<td>Box camera with embedded H.264 video streaming and video analytics</td>
</tr>
<tr>
<td>Automatic incident detection</td>
<td>p</td>
<td>p</td>
<td>p</td>
<td>p</td>
</tr>
<tr>
<td>Data collection</td>
<td>p</td>
<td>p</td>
<td>p</td>
<td>p</td>
</tr>
<tr>
<td>Multi-codec &amp; multi-streaming</td>
<td>-</td>
<td>-</td>
<td>p</td>
<td>p</td>
</tr>
<tr>
<td>Advanced camera optics</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>p</td>
</tr>
<tr>
<td>Encoding format</td>
<td>MPEG-4</td>
<td>H.264, MPEG-4, MJPEG</td>
<td>H.264, MPEG-4, MPEG-2, MJPEG</td>
<td>H.264, MJPEG</td>
</tr>
<tr>
<td>ONVIF compliant</td>
<td>-</td>
<td>-</td>
<td>p</td>
<td>p</td>
</tr>
</tbody>
</table>
Communication Board That Links VIP Boards to Your Network

Typically, VIP detector boards are installed in rack systems. In each rack, a dedicated ViewCom board handles compression and transmission of data, alarms, images, and real-time streaming video over the internet in MPEG-4 or H.264. These communication interfaces link the VIP boards with different types of communication networks: direct line, telephone lines, fiber networks, and wireless communication.

Remote access to ViewCom/E MAX+ via the internet browser allows for real-time monitoring of the VIP detector boards’ streaming video, as well as board setup.

Key Functions:
• Transmission of data, events and alarms generated by the VIP detector boards
• IP-addressable communication board
• JPEG image compression
• MPEG-4/H.264 streaming video
• Quad view of four cameras for intersection overview
• Web server with dynamic HTML pages for remote administration
• Remote and real-time monitoring of the VIP detector boards
• SNMP network management protocol support

Key Benefits:
• Single slot direct plug-in module, rack space saving board
• Connects via SDLC Interface Device with TS2 controllers
• Field-proven performance
• Easy-to-install, user-friendly setup, high mean time between failures (MTBF) and low mean time to repair (MTTR)
TrafiRadar

Video and Radar-Based Vehicle Presence Sensor

The TrafiRadar vehicle presence sensor is a combination of a video sensor and radar, offering the most accurate detection for a wide range of applications. TrafiRadar improves traffic safety and efficiency at signalized intersections for:

- Stop bar and advance detection
- Traffic adaptive systems
- Dilemma zone protection

Accurate Stop Bar and Advanced Detection

TrafiRadar will provide traffic data and information on the presence of vehicles approaching or waiting at an intersection. The detection algorithms are based on FLIR's proven VIP platform of video image processors, which have been installed at thousands of intersections around the world.

Making Traffic Flows Efficient

TrafiRadar will pass over its information to the traffic light controller. As a result, better decisions can be made to control the traffic lights in a more optimal way. Therefore, TrafiRadar is an ideal solution to support traffic adaptive systems.

More Safety in the Dilemma Zone

TrafiRadar will warn the traffic light controller whenever a vehicle is present in the dilemma zone, either extending green time or extending all red lights in order to improve overall safety at signalized intersections.

Key Benefits:

- High detection performance from two proven technologies: video & radar
- Detects at distances up to 600' on multiple lanes
- Easy to install and configure
- Compact and cost-effective, above-ground solution
- Real-time visualization of radar objects on the video image
- Remote monitoring
- Low maintenance
Flux – Video Detection Management Software

Flux is an intelligent software platform for use with a FLIR video detection system. Flux collects traffic data, events, alarms and video images generated by the video detectors.

Management, Control and Visualization of Traffic Data and Events

The main goal of Flux is to manage and control all traffic information generated by various detectors and to make it useful, meaningful and relevant to the user.

Flux provides a user-friendly interface composed of a monitoring and a reporting application. Flux enables real-time monitoring of events and alarms. All event info is automatically documented and visualized in a straightforward way, allowing the operator to manage each traffic situation efficiently.

Browser-Based Graphical User Interface (GUI)

The client of Flux is a web-based application. This means users only need a web-browser installed on their PC that is connected to the network of the video detection system to access the traffic management system.

Event Recording and Immediate Replay

As Flux is used to store and collect data, events and video, an operator can immediately retrieve these recorded video sequences to analyze pre- and post-incident images. This direct visual information is extremely valuable for the operator, who can take necessary actions in case of an incident, and conduct traffic analysis afterwards.
Key Features

- Collection, visualization and storage of traffic data, events and alarms
- Graphical user interface for stand-alone use with powerful event alerting and extensive event logging
- Intelligent filter management
- Streaming video from multiple cameras, simultaneously
- Instant recording with pre- and post-event information

Key Benefits

- Fast, reliable and stable system
- Easy installation, Windows and Linux-compatible
- User-friendly configuration and operation
- Browser-based Graphical User Interface
- Expandable, scalable system
- Open architecture for easy integration with larger traffic management systems

Powerful Event Alerting and Intelligent Filtering

Flux uses advanced filters to ensure relevant alerting. A filter is a set of inhibitions to be launched for a group of cameras. Each inhibition is characterized by events that must be filtered on one or more zones. These filters can be triggered directly from the Flux user interface, automatically from digital inputs from the video detection system or the built-in Flux scheduler, or remotely from a larger management system.

Versatile Traffic Management Platform for Any Size System

From small-scale video detection to large-scale systems with hundreds of detection devices, the open architecture of Flux allows you to scale the system to the exact requirements of the project.

Extensive traffic data reports

Real-time traffic monitoring

Simultaneous, real-time video from multiple cameras
Cameleon ITS is a central software platform for transportation monitoring and management. The ITS version of Cameleon allows for the control of ITS-specific devices, including cameras, DMS signs, detector stations, gates, signal heads and incident detection. Cameleon includes a complete video management solution native to the application. ITS allows full support of video decoding, distribution, transcoding and supply of digital streams to clients, video walls, websites and video sharing with other agencies.

A powerful feature of the software is the ability to utilize the standard off-the-shelf software for a large variety of projects, with simple configuration and customization utilizing device drivers and automation. The software supports both thick and thin client solutions and is fully client-server and client-multiple server capable for center-to-center applications.

Cameleon supports standard interfaces, such as NTCIP and TMDD for device control, as well as XML data exchange for custom interfaces. Access to devices and video, along with the ability to restrict video feeds, is managed through the software. Control center functionality includes multiple monitor support for clients, along with robust integrations to video wall processors, computer display switchers and audio switching.

Cameleon has several integral applications for monitoring health and status of software components, as well as an automatic software update manager. Components can be automatically restarted based on several monitoring criteria, and all system events are logged to the Windows system log.

Typical applications for Cameleon ITS are large scale video management and sharing, DMS sign control, lane control, congestion warning, travel time, incident management and parking control systems.