



*Published in Safety and Security August September 2007 (ENFORCEMENT/SURVEILLANCE)*

Contact Presse : Eric Toffin [eric.toffin@citilog.com](mailto:eric.toffin@citilog.com)

Tel: +1 267 304 52 36

## Toronto improves incident response

A traffic management system being used to detect disruptions to traffic flow along the Don Valley Parkway, Gardiner Expressway and Lake Shore Boulevard in Toronto, Canada, has been enhanced through the adoption of Citilog's VisioPaD video image processing system on 21 of the 57 cameras on the network.

The RESCU management system, which has been in service since 1994, also has 635 vehicle sensors (loops) and six overhead changeable message signs. It is operated by the City of Toronto's Transportations Services division. Spokesman Steve Kemp says: "We didn't have a significant accident problem. But there is a public expectation that we are able to detect any incident that happens and to respond quickly."



"There were a few high profile incidents that we did not detect, so we started to look at ways to have a better chance of detecting incidents. It was not the numbers of collisions that was the problem. It was those that were not being captured."

He says: "Although there hasn't been a dramatic reduction in accidents we are now responding to incidents quicker than before."

The City of Toronto Transportation Services Division is responsible for the operation and maintenance of over 5,300km of roadway including 60km of urban expressway. The network includes over 2,000 traffic control signals and 600 pedestrian crosswalks.



The Gardiner Expressway is a six-lane urban freeway with at-grade and elevated sections. Running parallel to the expressway is a six-lane arterial roadway called Lake Shore Boulevard. The Gardiner-Lake Shore corridor carries approximately 300,000 vehicles a day. The Don Valley Parkway (DVP) is a six-lane urban freeway at-grade. The DVP carries over 200,000 vehicles per day.

Both the Gardiner and the DVP experience congested conditions for most of the day. In many areas these expressways have limited or no shoulders. As a result incidents that are not cleared quickly cause significant delay to other road users.



RESCU uses a combination of tools to detect incidents within the road network. Traditionally, automatic incident detection algorithms have used data from inductive loops to identify disruptions. Operators then confirm these disruptions through closed circuit cameras and implement response plans accordingly.



This method of incident detection has been successful; however, it is dependent upon traffic congestion building as a result of the incident in order to "trigger" the upstream detector station. During periods of light traffic some incidents do not result in a significant disruption and are therefore not detected by traditional methods.

Citilog's VisioPaD provides traffic operators with an alarm (audible and visual) immediately after an incident occurs (within seconds), even before the consequences of this incident can be noticed by traditional monitoring.

Video signals from the existing CCTV system are fed into video detection units that run a detection algorithm which identifies stopped vehicles within the field of view of the cameras.

Because it requires no setup or calibration, Citilog says VisioPaD fits perfectly into any CCTV system without the need for additional or new cameras. It also does not require the use of preset positions on PTZ cameras: cameras can be moved at will and within a minute the system automatically recalibrates and is fully functional. The system works in the background on all pictures of the network, 24/7 and traffic operators can concentrate on other tasks than pure surveillance of screens.

VisioPaD turns a traditional video surveillance system from a reactive monitoring system (incident verification) to a proactive monitoring (incident detection) system.

Additionally, for each incident detected a digital video clip is automatically recorded by the system. These clips are tools to investigate the nature and the cause of incident.

Toronto's Steve Kemp says that during periods of light traffic overnight, existing systems would not detect vehicles stopped on the shoulder of the expressway. Operators relied on detecting these incidents visually either through closed circuit cameras or reports from field patrols. These shoulder incidents (although most are often minor) have occasionally become major when secondary collisions occur. The combination of a stopped vehicle on the shoulder and high speed traffic in the adjacent lane has at times had deadly consequences.

"Our ability to detect this type of incident quickly and get the appropriate emergency services on scene has been greatly enhanced by the Citilog VisioPaD system.

"The system immediately improved our ability to detect incidents within our coverage area. The false alarm rate is minimal, usually caused by shadows under bridges, and managed easily by our operators."

The added benefit of storing incident video has helped to identify problem areas within the network. It has also proven useful to determine the cause of some incidents, added Kemp. Kemp said the department would consider looking at more VisioPaD units 'down the road'.

Citilog  
<http://www.citilog.com>