Bonneagar Iompair Éireann
Transport Infrastructure Ireland

Kinesense
www.kinesense-vca.com

Red Traffic Light Infringement Analysis

Transport Case Study

Transport Infrastructure Ireland (TII) has responsibility for the light rail 'Luas' system operating in Dublin and was looking for a solution to detect and analyse car driver behaviour and occurrences of red light violations on Luas junctions, to aid the risk assessment of junctions.

Kinesense delivered an impressive system which enabled us to analyse risk in relation to specific junctions and the Luas light railway system and to capture and report on adverse incidents. The Kinesense team were great to work with during the process. They responded to our requests with great attention to detail and suggested many valuable enhancements to the system performance."

Bernard Kernan, TII

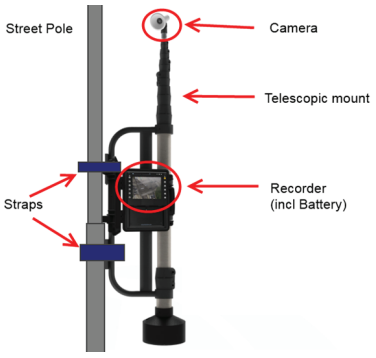
Before

With a large number of Luas junctions in the city, the Luas tram systems is an integral part of the city Infrastructure. The tram system must safely move passengers around the city whilst intersecting with major roadways and pedestrian areas. There had been incidents of collisions with vehicles at Luas and road intersections, as well as cars stopping in the junction and causing congestion and delays for the trams. Issues included:

- Risk of Tram/Vehicle collision
- Congestion and delays to the network

Building on knowledge of tram/ vehicle interaction gained over many years, TII wanted a system that would enable them to better understand car driver behaviour at junctions and to analyse infringements. The system had to be portable, easy to use and make use of video data rather than relying on information from the traffic light signals.

As the system was going to be moved from junction to junction, it had to be easy to recalibrate for the environmental factors which may affect the system from location to location. It also needed to be reliable in the full range of lighting and weather conditions in a busy outdoor environment.



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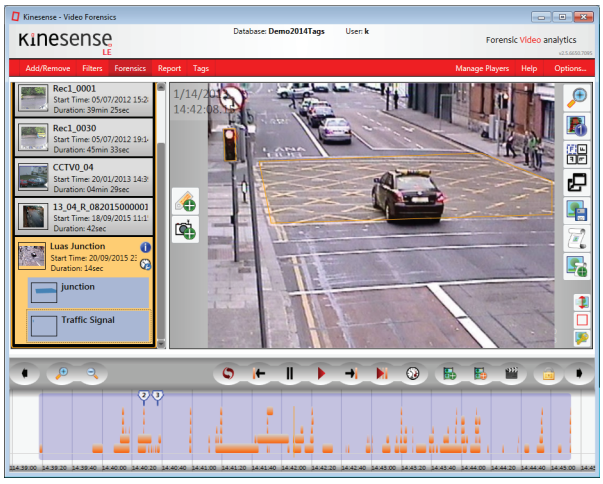
Result

Kinesense developed and provided a solution consisting of a portable camera and recording device, analysis software and professional services. The solution records video at junction intersections and analyses the video data to determine when a vehicle has crossed the stop line at a junction whilst the traffic light is red. Using the system provides TII with information about how many vehicles are infringing red traffic lights and the environmental factors such as time of day and weather conditions when they are doing so.

How they use it?

TII deploys the portable camera successively at various problematic junctions and records video for a number of days. The video is then analysed using the Kinesense software. The analysis software encompasses analytics and functionality designed specifically for red light traffic infringement, including detection of Luas trams, detection of vehicles and detection of when traffic signals were red. As a result, the software can automatically detect when a car breaks a red light. TII investigators can therefore easily review car driver behaviour at selected junctions, analyse possible violations and create customised reports with all relevant factors.



After

- Insights on car driver behaviour at key junctions
- Data on to number and timing of violations
- Increased ability to assess risk at junctions
- Insights as to why violations were occurring