

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 occurrences of red light violations on Luas junctions, to aid the risk assessment of accidents and collisions at 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

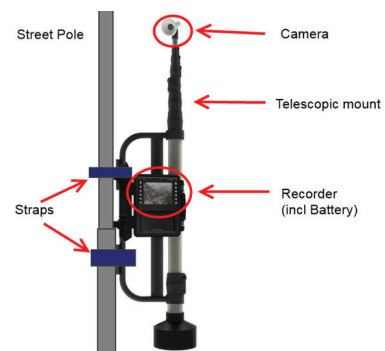
Before

With 62 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 rail and road intersections, as well as cars stopping in the junction and causing congestion and delays for the trams. Issues included:

- High risk of Tram/Vehicle collision
- Congestion and delays to the network
- No insights as to level or risk
- No insights to why collisions may take place

As a result, TII wanted a system that would enable them to analyse the number of infringements that were taking place at junctions. 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.

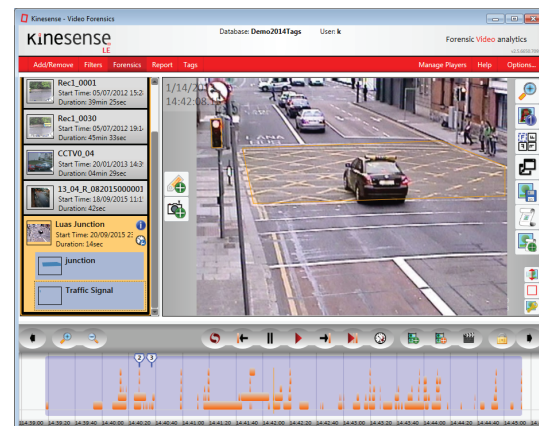


How they use it?

Result: Kinesense developed and provided a solution consisting of a portable camera and recording device, analysis software and professional services. The solution recorded video at junction intersections and analysed 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 provided TII with information about how many vehicles were infringing red traffic lights and when they were doing so. By using the system, they were able to identify that at certain junctions the green light only allowed 2-3 cars to get through a junction before the light changed. This meant that during congested times, drivers were more likely to break a red light. This feedback enabled TII to provide evidence of issues to Dublin City Council who manage the traffic systems in the city.

How they use it?

TII deployed the portable at various problematic junctions and recorded video. The video was then analysed using the Kinesense software. The analysis software encompassed 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 could automatically detect when a car broke a red light. The results were that TII investigators could review possible violations and create customised reports on when this was occurring and at what junctions.



After

- Insights as to number of timings of violations
- Greater ability to assess risk
- Insights as to why violations were occurring