



## Strukton Rail Consult

### Visual Monitoring of Level Crossings

One of the innovations within Strukton Rail Consult is the visual monitoring of level crossings. This is a system providing data about level crossings, such as operating aspects for the traffic control, safety and management aspects for maintenance contractors and infrastructure managers, and information about offences.

#### System

One or two cameras register images of the level crossings. These images are analysed and processed using intelligent image analysis processing and sent to a central website. This can be done as part of the POSS monitoring system.

The image analysis provides information about:

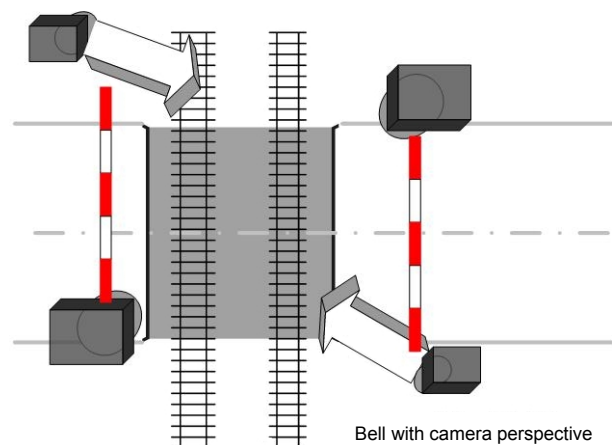
- Safety of the level crossing (standstill detection, slalom behaviour, traffic crossing too early, etc.)
- Traffic movements (intensity, direction, speed, classification (lorries, cars, bicycles, etc.))
- Occupancy of the level crossing (how long/how frequently is the level crossing closed)
- Level crossing cycle (time between various aspects of the level crossing cycle)
- Train movements (length, direction, speed, etc.)
- Level crossing machine (barrier movement, lights, electronic bell sound, fixed objects inspection (e.g. St. Andrew's crosses, etc.)

#### Installation

Digging is not necessary because the system can be mounted 'invisibly' underneath the bell. This makes the installation of the system simple and cost-effective.

#### Remote access

Users have direct access to the data through an internet site. The data are shown on this website based on the kind of information that is relevant to the individual user groups (traffic control, maintenance contractors, infrastructure managers).



- 1) Operating aspects on behalf of traffic control
- Road traffic standstill detection and alerting
  - 'Rail tracker' detection and alerting
  - Live images (optional)



- 2) Safety aspects on behalf of maintenance contractors and infrastructure managers
- Measurement and monitoring of time elapsing between first flashing of lights and going down of barriers
  - Measurement and monitoring of time it takes for barriers to go down
  - Measurement of time elapsing after barriers have gone down and train passes
  - Alerting in case of defective lamps
  - Alerting in case of defective barriers or barrier machine
  - Detection and alerting in case of missing objects (incl. graffiti)
  - Alerting in case of defective bells
  - Live images (optional)

- 3) Management aspects on behalf of maintenance contractors and infrastructure managers
- All historical data of the level crossing
    - level crossing machine
    - road traffic
    - train traffic
  - Historical images for incident analysis
  - Trend analysis
  - Reports and overviews

- 4) Offences
- Speed
  - Slalom behaviour
  - Driving through or crossing too early
  - Standstill detection
  - Vandalism
  - Rail trackers

(Monitoring offences is not meant to fine the persons involved, but important to establish the event)

