Networked average speed enforcement solutions

Safer, smoother, greener, fairer
What is SPECS3?

SPECS3 is the new generation of the highly successful SPECS average speed enforcement system. Based on the experience gained from over 200 permanent and temporary installations, SPECS3 brings the latest technological developments to the time over distance concept, offering even greater benefits to those trying to control traffic safety, whilst reducing congestion, emissions and achieving extremely high compliance rates.

Each SPECS3 camera acts as a network node, allowing cameras to communicate back to a remote central Instation. This approach allows considerably greater flexibility and a lower cost than the previous generation, where a dedicated, hard wired link between cameras was required. Permanent SPECS installations typically deliver a 60% KSI reduction\(^1\); the advances made with SPECS3 will allow these benefits to be applied more widely, in ways not previously possible.

Speed Check Services is the global leader in average speed enforcement technology. We offer an unrivalled level of experience, delivering and supporting practical, functional systems in a cost effective way.

Networking & Communications

The original SPECS system required local, hard wired communications between the linked pair of cameras. Whilst this still delivered an effective solution, it limited the system’s range and could prove costly to install. SPECS3 has been designed around a distributed architecture, allowing cameras to be placed over a wide area. Each camera node communicates back to a remote server, using one of a number of possible communication formats. These include wireless 3G, ADSL broadband or LAN/WAN networks, where available. In this way, a much longer route, or network of roads can be covered. This also allows for simpler control from the back office, removing the need for camera technicians to regularly visit the enforcement zone to collect violation data.

\(^1\) Review of all permanent SPECS installations, comparing 3 year baseline with 3+ years post installation

SPECS3 key features include:

- Every camera can be an entry or an exit camera
- High quality offence images, night or day
- All offence data is collected remotely (ADSL, 3G, ISDN, WAN, LAN)
- Journeys can be calculated between any valid cameras
- Forward or rear facing links can be configured
- Any lane entry to any lane exit can be monitored
- Enforcement links can be from 250m to 20km+
- No loops, strips, radar or laser needed to trigger the system
- SPECS3 can be operated alongside existing SPECS equipment
- Significantly lower installation costs than SPECS
“Speed Check Services are the global leader in average speed enforcement technology”

Image Clarity
Advances in camera and illumination technology mean that SPECS3 is able to provide high quality images, even in challenging environmental situations. Infra red LED illumination allows the cameras to capture clearly defined images in complete darkness. In this way SPECS3 can capture full colour images during the hours of daylight as well as greyscale images when it is dark. This ensures the system is fully effective 24 hours a day, including situations where it is not permitted or practical to install white floodlighting.

Each SPECS3 camera module contains two cameras: one captures an overview image, showing a vehicle in the context of its surroundings, whilst the second is an Automatic Number Plate Recognition (ANPR) camera, which allows the vehicle’s registration mark (VRM) to be read at each camera location.

Roadside Equipment
The camera and columns have been designed to maximise their visibility to motorists, ensuring that the deterrent impact of SPECS3 delivers extremely high compliance. The highly distinctive columns are available in a number of configurations and colours to suit different operational environments.

Remote Server
The roadside equipment routinely sends encrypted VRM data back to the remote server (ERCU) via the appropriate communications medium. The server determines if an offence has been committed on a selected route between a valid pair of cameras and retrieves the offence file. Offence files consist of images, time stamps and location data for each camera. These are combined at the server before being written to an encrypted violation DVD.

Offence Viewing & Processing
The violation DVD is transferred by hand across an ‘air gap’ to an offence viewing PC (OVDS). The operator will either view the offences directly through this PC, or will export them to an alternative offence viewing & processing system (e.g. ERIC, EROS, StarTraq, VP FPO).

SPECS3 Functionality
Every camera can be an entry or an exit camera
All cameras are network nodes, allowing links between any valid cameras, so one camera could be part of multiple potential enforcement links, significantly increasing the perceived monitoring zone.

Forward or rear facing links can be configured
SPECS3 will allow forward or rear facing cameras to be used, but a live link must use two cameras of the same configuration (rear to rear, or front to front). Motorcycle offences can be detected using rear-facing links.

Any lane entry to any lane exit can be linked
On multiple lane roads, links can be configured across lanes for vehicles which enter and leave the control zone using a different lane.

Enforcement links can be from 250m to 20km+
The minimum enforceable baseline will be 250m, but the maximum baseline is determined by the length of the speed limit. If the speed limit is unchanged, the baseline could be over 20km.
Application Examples

As with the previous SPECS generation, Rural & Inter-urban Routes will continue to benefit from average speed enforcement, with SPECS3 being ideal to control driver behaviour and speeds over lengths or areas of road, particularly where collisions and casualties have occurred.

Benefiting from a network coverage approach, 20mph Zones can now be addressed using a distributed network of cameras at key locations. In this way, the calming effect of SPECS can be applied across an urban area, improving safety and flows whilst reducing emissions and noise.

The proven traffic flow benefits of SPECS control can be applied to Congestion Management schemes, allowing better utilisation of busy roads without the need for significant engineering improvements.

Future developments to the SPECS3 concept will also address Active Traffic Management schemes, complete with full variable mandatory speed limits. This will provide a more efficient and cost effective solution to Managed Motorways.

Why average speed?

Whenever SPECS cameras are installed they dramatically improve driver behaviour and deliver: fewer collisions; lower casualties; greater journey reliability; smoother traffic flows; reduced congestion and lower emissions.

Company Overview

Since 1999, SCS has been the global leader in the development and implementation of average speed enforcement solutions. No other supplier has the wealth of specialist experience and knowledge to manage the design, installation and ongoing operation of average speed enforcement solutions.