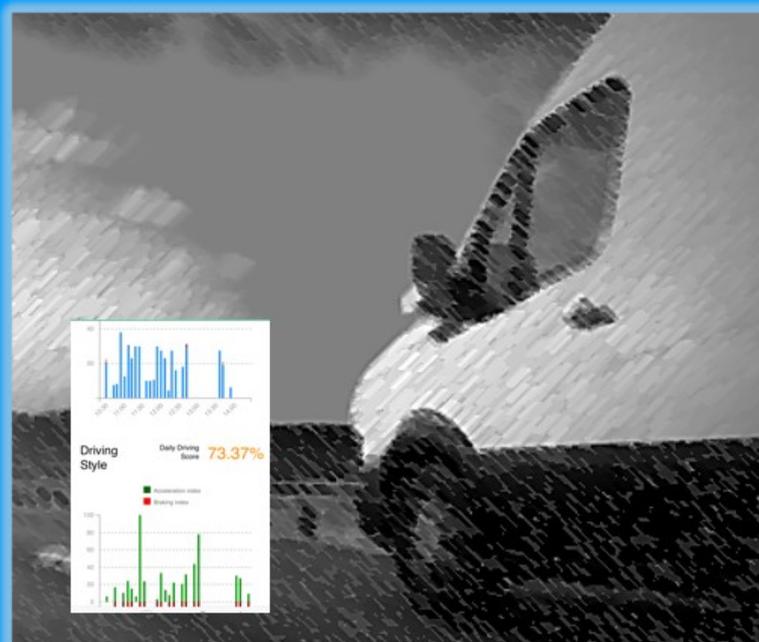


# Video Telematics: Are You Seeing The Full Picture?



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2023 Update

TelematicsConsultancyServices



Ideas



Strategy



Implementation



Operations

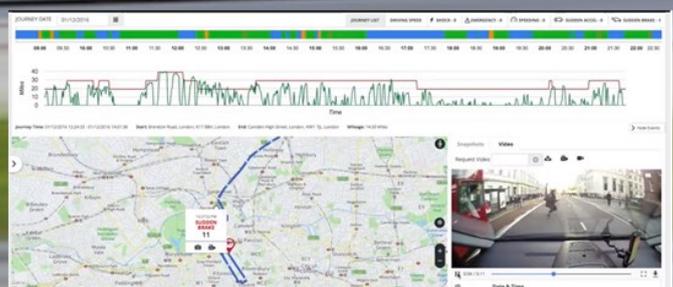
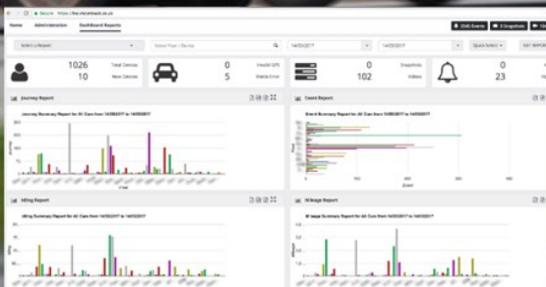


Review

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## Video Telematics : Are You Seeing The Full Picture?



# Introduction

Telematics Consultancy Services provide vehicle tracking, vehicle telematics with driver behaviour monitoring and video telematics solutions to small to medium sized fleet, typically between 3 to 50 vehicles.

Recently the topic of conversation with our customers, and also new enquiries, has been Video Telematics.

How does it work? Will it benefit my business? Is it too expensive for a small fleet? Will I need dedicated staff to manage it?

Today's Telematics solutions have evolved over the years.

From simple vehicle tracking to specialist software functionality for niche customer applications, mapping has more intelligence, management information is more detailed and flexible and able to integrate with existing business processes and systems.

The focus has moved from not only improving the efficiency of the fleet and reducing costs but towards improving driver behavior and managing risk.

And as the number of solutions and different types of solution available is increasing we have updated our eBook on Video Telematics. The eBook gives owners and managers of small to medium fleets the information they need to understand what's available and what's best for their business.

# What is it?

To achieve this telematics solutions now monitor the way a vehicle is driven in terms of speed, acceleration and harsh braking. This ability to monitor driver behaviour has allowed companies to cut incident rates, reduce fuel and maintenance costs and meet corporate responsibility under HSE guidelines.

## Safe Drivers, Safe Vehicles, Safe Roads

There are however limitations in the data that driver behaviour monitoring can provide and although it details the time, place and type of driving events it doesn't always explain why a driver may be driving the way they do or put the event into context.

Good driver behaviour solutions allow valuable driver debriefing and coaching but identifying the root cause of any particulate incident or driving event can be time-consuming.

Video Telematics, including video evidence or photographic snapshots, provides the full story of what's happening with accurate context. A quick review of the video or snapshot provides the reason for the harsh braking event, such as another driver pulling out or a pedestrian stepping into the road, or even driver distraction.

With footage of near misses, accidents or harsh driving events, driver debriefings and one to one coaching is improved with more effective driver engagement and education.

## Protect, Prevent, Prove

Enhanced driver engagement through driver behaviour analysis leading to improved driving styles helps prevent incidents in the first place, protects drivers from false accusations and the company reputation as well as prove liability in the event of an accident.

Drivers, companies and other road users all benefit from improved driving.

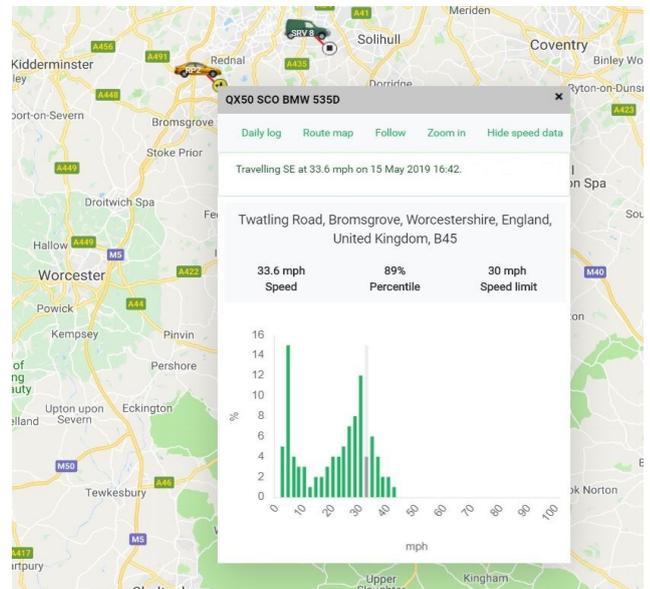
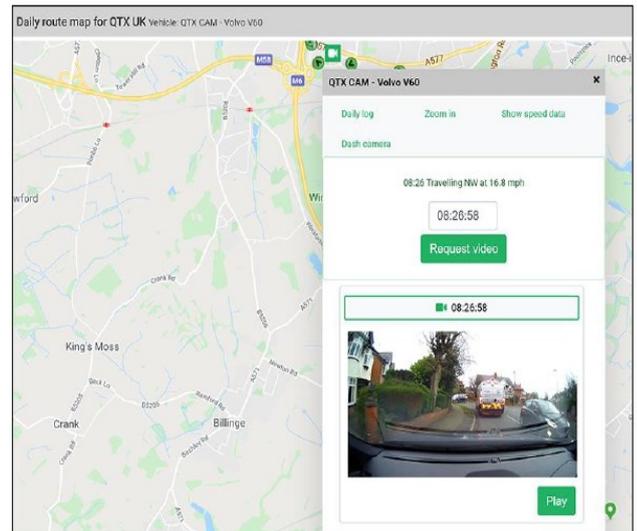
## Video with Telematics Data The Complete Picture

In a nutshell Video Telematics combines operational efficiency and reductions in fleet costs with both statistical analysis of driver behaviour and video evidence.

### You can't manage what you can't see.

Video provides the context to **what** happened, **where** and **why**.

Understanding the data and driver behaviour that video telematics reveals can help identify the drivers who are most likely to be in an incident, so the focus can move to prevention and improvement.



# How it works.

We're all familiar with the dashcams that seem to be installed in most cars and vans we see on the road. The purpose is to capture video, in short clips of around a minute in length, in the event of an incident. That incident may have been automatically detected by G forces recorded within the camera or manually by the driver through an emergency button.

The video may also have GPS location and speed data included allowing the video to be played back whilst the location of the vehicle is shown on a map.

All well and good. If.....

- *If the driver wants to tell anyone he was involved in an incident*
- *If the driver removes or downloads the video footage*
- *If the drivers manager can find time to review the video footage and match to telematics generated events,*

To many ifs.....

**With Video Telematics when an event happens:**

- Telematics data tells us **when** and **where** the event happened
- The telematics system records this for later reporting and review
- The in-vehicle camera video and/or picture snapshot is automatically uploaded to a secure server via the 4G mobile phone network. This tells us **what** happened
- The telematics system matches the video with other data which can tell us **why** it happened

So how is this achieved?

## Hardware — Cameras and Storage

Instead of the telematics “black box” being a separate item installed in the vehicle or plugged into the OBDII port the components such as GPS receiver, GSM module and processor are integrated into the camera unit or the GPS data and video is linked together at the Telematics Service Providers servers.

This camera unit is installed on the vehicle windscreen, similar to a normal Dashcam and then wired into the vehicle power supply and ignition circuits. Once installed it looks like a normal Dashcam and unless there is a driving incident that needs reporting to a central server acts just like a Dashcam whilst recording and transmitting standard vehicle tracking data.

The number of cameras connected is dependent of the hardware provided and the vehicle requirements, but can range from :

- A single forward-facing camera
- Forward-facing camera and internal camera monitoring the driver and vehicle interior
- Multiple cameras giving a 360° view surrounding the vehicle

Storage for video and images captured can either be on SD memory cards, internal SSD drives or large storage hard disc drives mounted in protective cases.

In all cases it is sensible and practical to have lockable data storage to prevent any tampering of video data that may be required to investigate an incident.

Other key points of a Video Telematics hardware solution are:

- Efficient compression of the video data files ensuring cost-effective communications costs
- Secure communications with the host server
- Ability to upload video with no driver intervention
- Ability to record video after the ignition is switched off—Ignition off delay
- Video supporting information such as speed, GPS position and G-force data
- Full HD quality video ensuring clear images any time of the day in any weather conditions
- Optional, but useful, ability to view live video remotely

# Telematics Software

It may be that you already have a telematics solution and want to add video for driver protection and safety or for insurance requirements. In this case the video can be uploaded and viewed in a separate application. But without integration with the telematics system the full picture of what happened leading up to a captured video event may be either unavailable or time consuming to stitch together with the video evidence.

An integrated solution with video capture, incident data such as speed, location and G forces combined with telematics mapping, journey history and other driving event information completes the picture.

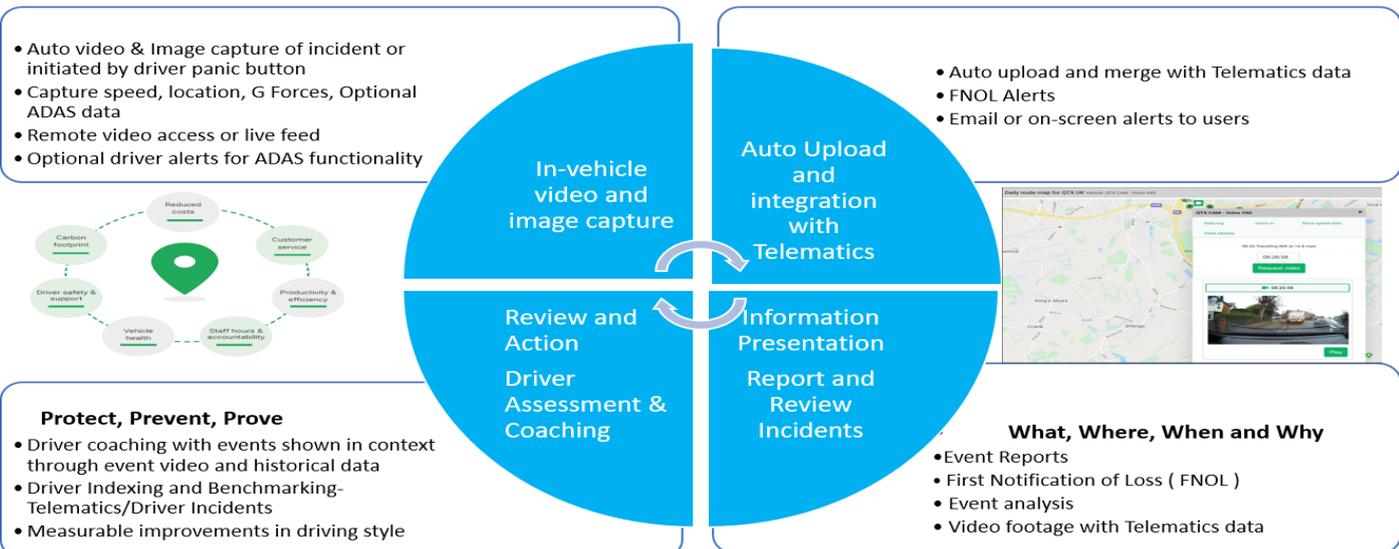
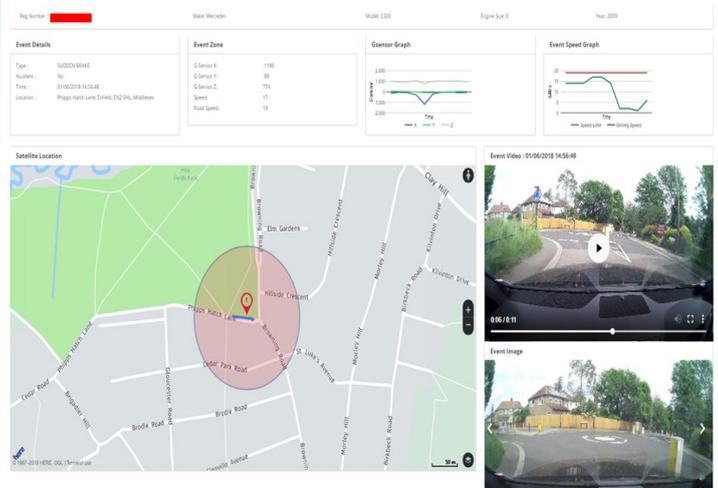
An integrated Video Telematics solution will show driving events as part of a vehicle's journey history allowing the user to see not only where the vehicle was at the time of the incident, but view video footage whilst also seeing the vehicle location on a map. The ability to request and upload video for historical activity assists in refuting poor driving claims from 3rd parties. An example is when a 3rd party claims your driver went through a red light or swerved across a lane and causes an accident or near-miss.

In addition to standard reports on vehicle activity and driver behaviour an additional report should be available which lists events when video or images were captured, allows the user to drill down to a map view and shows video, event details, speed and G force data for analysis and the context of the **What, Where, When and Why**.

A key role of integrated Video Telematics software is not only to provide evidence potentially protecting a driver and company from false claims but as a driver coaching tool.

Starting with driver behaviour reports, league tables and specific reports of events with captured video and images, one on one driver coaching can be more focused with both driver and coach having a fuller understanding of why an event happened and changes needed to prevent any recurrence.

First Notification of Loss ( FNOL ) alerts with immediate email and system notifications when an event has occurred give fleet operators the opportunity to take control of an incident and reduce any 3rd party claim costs. The quicker a fleet manager can react reduces financial loss and unavailability of essential fleet assets.



# Video Telematics Applications

## Which solution is right for your fleet?

There are a number of different Video Telematics solutions available today and to ensure you invest wisely and get the right solution to meet your specific operational issues and financial constraints it's worth understanding the differing solutions.



### Stand Alone Dash Cams

Seen everywhere nowadays and high quality cameras with wide-angle lens, HD images, dual lens and so forth have a use. Bear in mind though that the only way to match video to the telematics data is by manual searching and comparisons but the biggest issue is that the use of the video data is reactive. You need to wait until you are aware of an incident and the video is retrieved.



### Standalone Video Telematics

A number of solutions are available that allow remote access to both live video feeds and to retrieve historical video data from the vehicle. Many of these solutions use a mobile DVR in the vehicle linked to multiple cameras with a dash-mounted screen for the driver to see video as and when needed, reversing or for blind spots, for example.

Solutions such as these are more suitable to larger commercial vans or HGV vehicles and tend to be bespoke installations specified to meet the vehicle type and operational needs. In many cases these solutions will form part of vehicle camera and safety requirements meeting standards such as the Direct Vision Standard proposed for Greater London. The implementation date is October 2020 ( enforcement delayed until March 2021 ) for HGV vehicles over 12 tonnes gross vehicle weight.

Other accreditations or standards such as FORS Silver are not covered in this eBook.



## Integrated Video Telematics

Video integrated with vehicle telematics data is the most comprehensive solution for fleet operators looking to improved driver safety and reduce risk along with the many known benefits of existing telematics solutions.

The starting point for an integrated solutions is for the video data to be available via the users telematics software. In effect, as well as tracking vehicle live and historical locations, viewing driver driving styles such as speeding and harsh braking, video of the events can be viewed at the same time.

The vehicle may have both a telematics tracking unit and separate dash camera with 4G connectivity installed or the vehicle hardware may be a single "box". From a fleet operators viewpoint as long as the data is merged and available from a single software dashboard they can see both the vehicle data to understand what the vehicle was doing plus the video data to put the vehicle and drivers actions into context.

Functionality can include both proactive alerts with still images and short video clips, typically around 10 seconds, "pushed" to the smartphone and/or desktop software whenever an incident takes place and reactive retrieval of more detailed video footage when the incident is fully investigated.

# Video Telematics Applications

Integrated Video Telematics	Connected DashCam	Standalone Video Telematics	In-Vehicle Cameras
<ul style="list-style-type: none"> <li>✓ Fully Integrated Telematics &amp; Video</li> <li>✓ 3 G Connected Camera</li> <li>✓ Driver Behaviour Analysis Management Reports</li> <li>✓ Fleet Management</li> <li>✓ Video Event Management</li> </ul>	<ul style="list-style-type: none"> <li>✓ Vehicle Tracking</li> <li>✓ 3 G Connected Camera</li> <li>✓ Driver Behaviour Reports Management Reports</li> <li>✓ Remote Video Capture</li> </ul>	<ul style="list-style-type: none"> <li>✓ Vehicle Tracking</li> <li>✓ 3 G Connected Camera</li> <li>✓ FNOL ( Critical event alerts and video capture )</li> <li>✓ Journey Reporting</li> <li>✓ Video Event Management</li> </ul>	<ul style="list-style-type: none"> <li>✓ 3 G Connected Cameras - Multiple camera solutions</li> <li>✓ Remote access to video</li> <li>✓ Standalone DashCams</li> </ul>
<p><b>Application</b></p> <p>Full Vehicle Management</p> <p>Driver Behaviour Analysis</p> <p>Vehicle &amp; Driver Safety</p> <p>Fleet Management</p>	<p><b>Application</b></p> <p>Vehicle Tracking</p> <p>Remote Video Capture</p> <p>Vehicle &amp; Driver Safety</p>	<p><b>Application</b></p> <p>Video Telematics add-on for existing tracking systems</p> <p>Standalone video solution</p>	<p><b>Application</b></p> <p>Standalone video solution</p> <p>TFL Direct Vision Standard</p>



There are a number of different 4G Connected or stand-alone solutions that can be provided depending on a fleets specific needs.

The above comparison chart will assist in helping decide which solution is right for your business.

## Associated Video Telematics Services

There are a number of supplementary services that some Telematics Service Providers (TSP's) offer depending on a fleets specific needs.



### First Notification of Loss ( FNOL )

This could range from providing real-time alerts of a incident with video and data analysis of the vehicles current location plus speed, g-force and driving style leading up to, and at the time of, the incident, to the FNOL alert being received by an insurance or claims management company to take control of the incident as a managed service.

Data analysis and cleansing through advanced analytics is critical to prevent false alerts and unnecessary responses.

The aim is to reduce the time needed to respond to incidents, reduce the claims costs and take control of the incident.



### Managed Services

Typically these would include a TSP providing analysis of the video uploaded in the event of a driving incident such as harsh braking and providing the fleet operator with a breakdown of the event.

The TSP analysis of the video may be by trained personnel or using Artificial Intelligence algorithms to produce a report with an experts view and driving style scoring to identify risk .

Linking the video footage analysis to an ongoing driver training and safety programs is an area of managed services being offered by some TSP's. A drivers risk profile gathered from review of video incidents leads to a driver coaching session managed by driver training professionals.



### ADAS (Advanced Drive Assistance Systems )

ADAS functionality covers a number of areas where TSP's are extending the functionality they can offer via additional sensors linked to the in-vehicle Video Telematics solution and onboard analysis of the camera images.

Using Machine Vision technology within the in-vehicle hardware identifies potential risks and reports these to the telematics software whilst also alerting the driver in real-time.

Grouped under this additional functionality would be:

- Forward collision warnings
- Lane Departure warning
- Pedestrian location warning
- Safe distance to vehicle in front
- Driver fatigue ( monitoring eye and head movements )
- Distracted driving ( phone use, eating / drinking )
- Facial recognition
- Seatbelt use detection

## Why Invest ? What are the Benefits?

Telematics offers a number of benefits in terms of improving fleet efficiency, reductions in costs and, with driver behaviour monitoring included, improvements in fleet safety with reduced risks.

### Save Time, Save Money, Drive Safe

Video Telematics continues with those objectives but also increases the financial savings and driver safety improvements.

-  Build better relationships with drivers. Protect drivers against false claims.
-  Driver coaching and training with video improves driver skills.
-  Driver data and vehicle event footage tracked in real-time.
-  Protection of brand and company reputation by reducing risk and improving compliance.
-  Reduce the cost of incidents, claims, insurance premiums and vehicle repairs.
-  Provides key staff or 3rd party services with FNOL ( First Notification of Loss ) through real-time alerts. Reduction in time and resources to deal with incidents.
-  Identify risky routes and delivery locations.

## Why Invest ? Return on Investment

Like any other business investment you need to see a tangible return on your investment. Video Telematics increases the savings over standard telematics by improving safe driving, reducing incidents and ongoing reductions in fleet costs.

-  Bent metal costs- Decrease the frequency and severity of at-fault accidents.  
Key Measures
  - Decrease in accidents
  - Reduction in accident-related costs
  - Reduction in high risk driving events
-  Eliminate false claims  
Key Measures
  - Reduction in insurance excess payments
  - Prevent future insurance increases
  - Reduction in 3rd party claims
-  Insurance costs  
Key Measures
  - Decrease in future premiums
  - Decrease in claim costs
-  Vehicle Maintenance / Wear and Tear Costs.  
Key Measures
  - Saving in repairs for own fault incidents
  - Decreased maintenance costs
-  Driver Relationships  
Key Measures
  - Reduction in driver turnover
  - Reduction in new staff recruitment costs

# Frequently Asked Questions



## What is Video Telematics?

Seen In simple terms, video telematics combines video data pictures and vehicle telematics data to deliver insights that telematics alone cannot. A full story of **what** happened, **where** and **why**.

Telematics, for example, provides location information, as well as data about erratic driving events such as hard braking, acceleration, harsh cornering or collisions. Video telematics provides a critical context with video and snapshots completing the picture of what happened.



## Can I upgrade my current system to add video?

It may be that your existing Telematics Service Provider has a video telematics solution and you can upgrade.

If that's not the case you can still benefit from Video Telematics by adding a stand-alone Connected DashCam to the vehicle.

This will allow you to run your existing system to track vehicles but have any video for critical events uploaded and available, with mapping location data and event details, for review.



## DashCams are pretty cheap so what's the difference?

Yes, you can buy a DashCams online or even at your local garage that is pretty cheap. But also that is what you get- a cheap solution.

Cameras used for Video Telematics applications have a number of features making them suitable for commercial operations:

- High quality 1080p HD video and up to 30fps recording speed
- Super-wide viewing angle
- High-quality image sensor
- Accurate G-shock sensors and GPS
- Permanent power connection to the vehicle. Not plugged in into USB plugs
- Security with lockable case preventing removal of memory cards
- All contributing to reliable secure video



## It's too expensive for a small fleet.

Compared to what?

Camera costs are similar to that of a commercial specification DashCam whilst services costs have reduced dramatically over the past year.

Savings in ensuring you have a safe fleet due to the risk of accidents reducing is soon translated into bottom line business improvements.

Have a look at how this will save you money and measure that in financial terms.



## I don't need a complicated Telematics system, just tracking and the DashCam. What's my options?

A Stand-Alone Connected DashCam will provide you with full tracking and reporting functionality with critical events captured on video and uploaded to the tracking application.

This meets the need for customers who only need track and trace tracking but want the protection of a connected DashCam.

# Frequently Asked Questions



## I don't have time to view all of the video clips?

That's the whole point!

The system only uploads video clips where there has been a critical driving event. And with the reports showing when these happened, the vehicle involved and the type of event you only need to look at those that are necessary to reduce risk, prove liability, protect your company from unwarranted claims and coach drivers.

You can concentrate on running your business knowing that if there is an issue that needs your attention you'll be informed of it.



## I've been told I need a DVS approved system. What's that?

That is not true for LCV's or for outside of the London area.

The Transport For London (TFL) Direct Vision Standard (DVS) and safety permit for heavy goods vehicles (HGVs) requires operators of lorries over 12 tonnes gross vehicle weight to apply and obtain a permit to enter or operate in Greater London, or you may receive a Penalty Charge Notice.

The Direct Vision Standard (DVS) is new safety legislation from Transport for London created to improve the safety of all road users, including pedestrians, cyclists and motorcyclists.

If you have vehicles under 12 tonnes GVW you do not need to meet the DVS requirements.

From 26th October 2020, with enforcement commencing 1 March 2021, HGVs over 12 tonnes gross vehicle weight will need a Safety Permit to enter Greater London. Visit [tfl.gov.uk](https://www.tfl.gov.uk) for more info.



## What are the benefits?

Save Time, [Save Money](#), Drive Safe

Video Telematics continues with those objectives but also increases the financial savings and driver safety improvements.

Build better relationships with drivers. Protect drivers against false claims.

Driver coaching and training with video improves driver skills.

Driver data and vehicle event footage tracked in real-time.

Protection of brand and company reputation by reducing risk and improving compliance.

Reduce the cost of incidents, claims, insurance premiums and vehicle repairs.

Provides key staff or 3rd party services with FNOL (First Notification of Loss) through real-time alerts. Reduction in time and resources to deal with incidents.

Identify risky routes and delivery locations.



## How will this save me money?

Like any other business investment you need to see a tangible return on your investment. Video Telematics increases the savings over standard telematics by improving safe driving, reducing incidents and ongoing reductions in fleet costs.

More details in the section on What are the benefits?

# Conclusions

Fleet operators in the UK are moving towards video telematics in ever greater numbers and the number of Telematics Services Providers with solutions is increasing but the selection of a solution suitable for a small fleet ( 5-50 vehicles ) can be confusing.

The objective from whichever type of system you select is to:

**Save Time, Save Money, Drive Safe**

And that requires a discussion on your current fleet problems and operational and financial objectives.

There is a solution available for every fleet operation and more importantly every fleet operator can save time, save money and improve safety both for their own vehicles and other road users.

If you want to discuss how Video Telematics will improve your fleet operations please let us know.



Author. Nigel Porter © 2023

Nigel Porter has over 30 years experience in telematics and mobile data with roles in development, sales and operations. Ranging from the early days of GPS tracking over analogue mobile phone and Private Mobile Radio networks to current GSM GPRS and satellite communications he has seen telematics evolve into an essential management tool for companies with mobile assets. His telematics experience is with both start-ups and large international public companies covering all aspects of product development, sales, technical and customer management for both commercial telematics and high level security applications. Currently he provides independent advice to companies seeking to implement telematics., supports investors looking at telematics opportunities and acts as a Expert Witness in insurance claims and Court proceedings.

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