

IMPROVING DRIVERS' BEHAVIOUR WITH ADAS SOLUTION

INTRO

Bad driving behaviour can have costly consequences. It is important to detect, assess and prevent such incidents to avoid damage to fleets, freight and people as a result of irresponsible driving. The **ADAS** solution developed by Teltonika Telematics has been enhanced with a new visual monitoring feature - video and photo-on-demand - which significantly extends the benefits of the current solution.

CHALLENGE

Bad driving behaviour is defined as any driving practice that is inherently unsafe and includes speeding, distracted, careless or reckless driving. These actions may lead to forward collisions, lane departures without signalling and deliberate tailgating which are among **common reasons** for accidents. As a result, according to the Federal Highway Administration (FHWA), about **51%** of all fatal commercial motor vehicle accidents are caused by unexpected lane departures or failure to signal properly. In addition to that, around **20%** of fatal truck or lorry crashes are caused by non-compliance with speed limits, which is costly for companies in the event of an accident.

The average cost of a commercial fleet crash is **\$70,000** which can be a substantial expense for a company budget. It is essential to be able not only to detect and prevent car accidents but also to establish continuous improvement to avoid such circumstances in the future.

Sadly, laws around the world that impose legal requirements on drivers to prevent driver misbehaviour are not yet 100% effective. For instance, there are around 15.5 million trucks in operation in the U.S. with almost **415.000 reported** commercial crashes which clearly indicates the gap that is in the interest of the fleet owner to fill in. The adoption of additional tools and processes to complement legal requirements will benefit the company by reducing significant costs, time, and efficiency losses. With the right tools, the right challenge data and the right solutions, continuous improvement helps to boost company productivity and efficiency.

Teltonika Telematics has therefore taken into account the needs and preferences of existing and potential customers to meet the need for a solution and has implemented a **visual monitoring functionality in its Advanced Driver Assistance System**, also known as ADAS. Now it combines all previously implemented ADAS features with video/photo-on-demand functionality to provide much-needed **visual evidence**.

SOLUTION



The solution consists of a windscreen-mounted ADAS and a PROFESSIONAL series vehicle GPS tracker [FMC640](#), connected via an [RS-232](#) serial port. The tracking device has an additional RS-232/RS-485 serial port and a 2X10 socket, allowing to expand corporate fleet monitoring capabilities. Even more, the model can use multiple [LLS](#) sensors, an additional 3 analogue inputs, 4 digital outputs for a relay, starter and engine control, as well as CAN bus data reading.

The combination of FMC640 and ADAS creates the solution that provides fleet management with the right tool for acquiring visuals from the events. The event is being mapped, therefore firstly requested photo may determine the relevance and necessity of the video material, **saving time and money** for unnecessary data usage. This solution allows accessing photo and video materials remotely based on the specific accident, location or time. The data from the FMC640 and ADAS might be extracted with graphical evidence along with necessary information about cargo and vehicle state tight to it. For instance, requesting a photo in case of an unidentified geofence breach. The solution gives an opportunity to combine data, **analyse the patterns across the fleet** and implement changes that will increase company efficiency.

Identification, prevention and implementation of continuous improvement might be some hefty tasks. However, the ADAS range of functionalities creates a perfect tool to use for the correct solution. Improvement of actual, not theoretical problems within an organisation is important and more efficient. Fact is, data gathered from real-life and in-company situations is more useful than the use of general business-related **videos and photo examples for training purposes**.

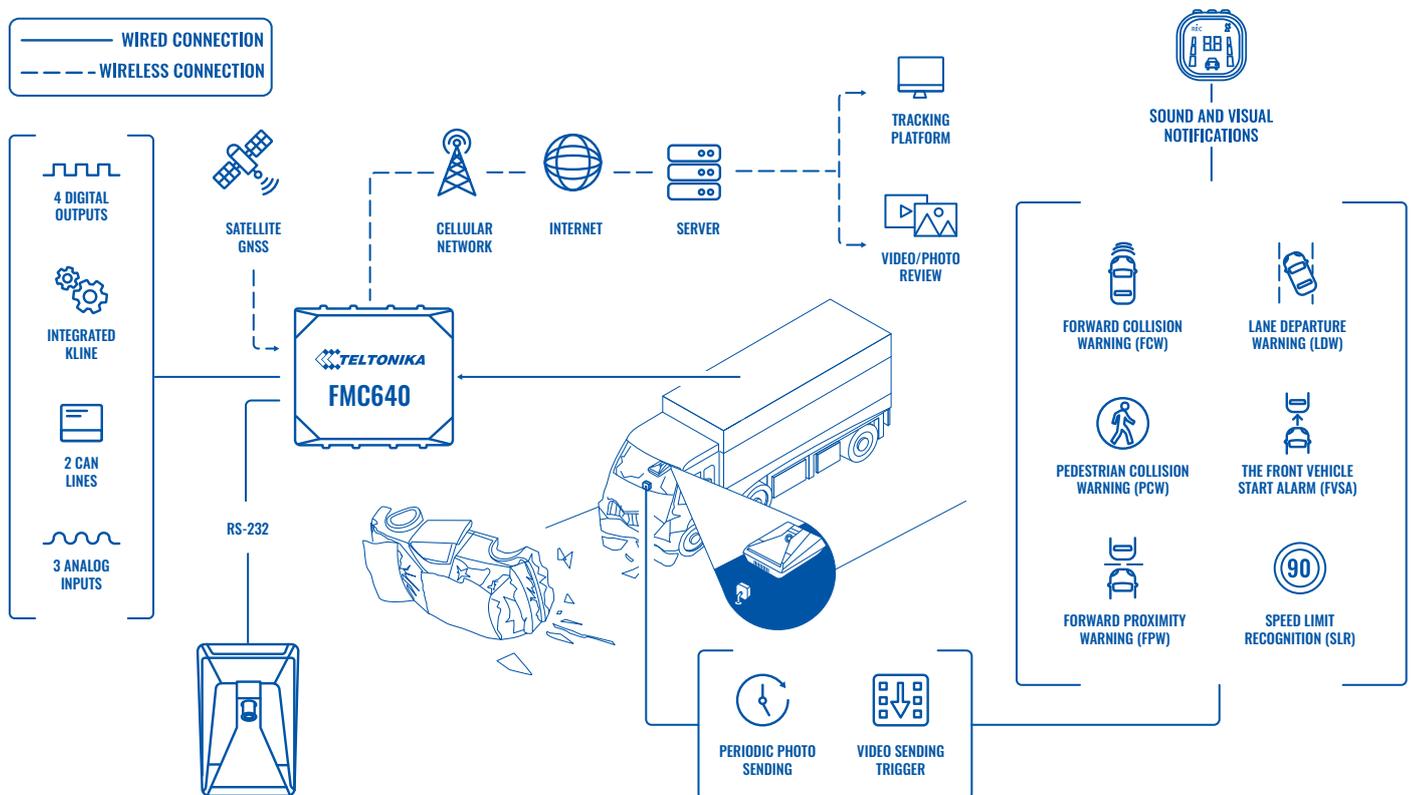
Brand new ADAS video and photo on-demand functionality can be also configured for periodical photo sending or video/photo transmission by a trigger. Various events of interest of **bad driving and its exact location** are identified, sent and stored in the server throughout the process of driving. The new ADAS visual monitoring functionality opens a possibility for a fleet manager to receive photos after the configured trigger and have an option to request a short video for up to 30 seconds for more visual data (20 seconds before the event, 10 seconds after the event). The visuals are mapped and stored for further analysis that can be used for the **creation of a continuous improvement training package**.

ADAS systems prevent up to 40% of car accidents and up to 29% of fatal accidents. With an additional benefit of visual monitoring functionality, the implementation of continuous improvement is more efficient and personalised. Many researchers like [Robin H. Kay, 2012](#), [Wen-Jung Hsin and John Cigas, 2013](#), [Brent R. Stockwell, 2015](#) have examined, evaluated and confirmed the positive effect of video materials as a source of learning. Therefore, an additional feature of the ADAS solution helps to present the fleet manager with evidence of the event of interest that is further used for the evaluation, training and contribution towards training packages within the fleet management system.

All in all, inappropriate driving behaviour can lead to costly consequences, which is why it is important to prevent it in the company fleet as much as possible. The brand-new ADAS functionality, which allows requesting a video or photo based on the events or time interval of interest, provides graphical evidence of such cases for evaluation, training and evidentiary purposes.

For example, a photo will be sent immediately if there is a potential accident, or if it actually happens. So, if additional video evidence is needed, the fleet manager can also request it. Video material will not only be used as proof of occurred event to the insurance company, but also for the analysis by the company to prevent similar situations in the future. Analysing videos and photos can help you design training packages for continuous improvement, including **motivational and bonus systems** that increase company efficiency and help prevent future accidents.

TOPOLOGY



BENEFITS

- **Prevention of bad drivers' behaviour** – the combination of FMC640 and ADAS allows precise location tracking, detailed vehicle statistics and graphical representation of the event to prevent future accidents.
- **Graphical evidence of an event** – short videos or photos of the events can be sent to a server for further evaluation, evidence, and archive.
- **Car accidents may be reduced in the future** – the use of graphical evidence helps to uncover unforeseen situations, reducing the likelihood of the same situations happening again.
- **Pattern establishment** – more efficient analysis of common fleet errors using video.
- **Implementation of continuous improvement** – accurately detected problems and correctly created solutions help to increase company efficiency, effectivity and profitability.
- **Relevant materials for training purposes** – higher effectivity of training materials due to relevant use of materials.
- **In-depth analysis of the event** – useful tool for an investigation of an event that occurred. It is important to understand and evaluate how specific situations happened and how to avoid them in the future.
- **Flexible configuration to the project needs** could bring added value to the company. Individually configured triggers or events of interest can be recorded for the specific needs of clients.

WHY TELTONIKA?

In Teltonika, customers and their success are our top priority. For 24 years, we have been developing solutions to help our customers increase efficiency, profitability and improve their fleet management system processes. Our company video telematics solutions are being used all over the world and help to track, record, notify, and evaluate the drivers' behaviour on the road. Prevention of bad drivers' behaviour contributes to a safer road environment and helps to avoid costly consequences for the company budgets.

Teltonika Telematics has an extensive portfolio of products, accessories, and solutions. They are designed, developed and tested by our experienced experts with extensive knowledge in the telematics field. Rest assured, we innovate, develop and deliver the best possible results to help you succeed.

FEATURED PRODUCT

FMC640

RECOMMENDED PRODUCTS

FMB640-FMB641

RECOMMENDED ACCESSORIES

ADAS

