Going Visual

Why Recording a Collision isn't the Solution

Introduction

Traditionally, fleet safety programs have been built on an "accident management" model instead of being centred on crash prevention. This meant that it was "acceptable" for fleets to experience a certain number of collisions — the industry average was and continues to hover around 20%, i.e., statistically 20 out of every 100 vehicles will experience some type of incident[1].

If a fleet follows this accident management model, it accepts that a part of its budget will be committed to paying for the consequences of these collisions, such as:

Maintenance

Vehicle and driver downtime.

Potential injuries to the driver.

Litigation and subsequent liability payments (which could reach far beyond budgeted estimates).

Increased insurance premiums as a result of severity of collisions, number of collisions the fleet has already suffered, and any findings of liability.

Collision prevention — a growing trend within the accident management model — is a step in the right direction, but it nonetheless perpetuates the retrospective, reactive approach. A collision has to occur before steps can be taken to prevent it from recurring. While analysis of collision data is useful to avoid crashes in the future, it's still built on the assumption that prevention must come as a reaction to an event.

Safety technology has improved over the past decade or so, becoming more sophisticated, giving fleets more ways to protect drivers and minimise collisions; but technology such as video data recorders, which just capture a collision as it happens, is still often caught in the accident management web. Recorders are helpful for augmenting retrospective analysis, which, while reactive, has its place in training and after-the-fact prevention strategies. Also, recorders are an effective tool in exonerating drivers in incidents involving collisions that might otherwise lead to criminal charges or claims of liability

But a better technological solution, which also liberates fleets from the accident management web, is using artificial intelligence (AI)-powered visual technology not to record a crash, but to *"read"* the surroundings and keep the driver alert to any dangers — thus, in many cases, **preventing the crash altogether**. Most importantly, this approach avoids the human and material costs associated with a collision.

Zeroing in on the Cause of Accidents

Centring collision prevention on the driver makes good operational sense, because it is the key to overcoming the generally accepted 20% fleet accident rate, and reducing driver risk rates. Research has found that about 94% of road accidents are due to driver error[2].

Distraction has been a growing reason for collisions, fuelled, in part, by the use of smart phones and other mobile devices.[2] Other causes of distracted driving include in-vehicle technology, roadside distractions (e.g., billboards and rubbernecking), driving while drowsy, day dreaming[3] or just spending long hour behind the wheel.

While many fleet safety programs do a good job educating drivers about the dangers of distracted driving, the reality is that even the best driver will on occasion be drowsy, glance at his or her phone, or be momentarily distracted for a myriad of reasons.

Because humans can't be programmed like a computer or a robot, there's a high probability that drivers will stray and engage in distracted behaviour at some point.

2 seconds of warning
Could prevent nearly all forward collisions[4]
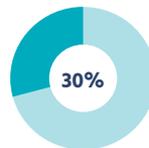
30% of collisions
Could be prevented with ADAS[5]

This is where the advantages of an AI-powered visual system come into play. Instead of simply recording a driver's risky behaviour, as is the case with a video data recorder, as they're getting in a near or actual collision, a visual system can alert the driver in time to regain his or her attention and avoid the potential collision.

94% of accidents
are caused by driver error[6]

94%

Nearly 80% of crashes involve driver inattention within three seconds before the event[7]

80%

Hand-in-Hand Technology

While simply recording risky behaviour or a collision does nothing to eliminate its negative consequences, having a visual system working in tandem with telematics can offer significant benefits.

The visual system will do the heavy lifting, helping to alert the driver when he or she is, for example, following the vehicle in-front too closely or if a pedestrian is crossing the street ahead in dangerous proximity. This gives the driver time to take steps to avoid a collision, e.g., slow down (following distance) or come to a complete stop (the crossing pedestrian).

In addition, telematics is becoming commonplace in many fleets, giving them the ability to capture a wide array of data, including from a visual system. While a visual system's primary role is to alert the driver to an imminent threat and not to record images or collect data, some fleets are more data-driven than others and may want to capture the number and types of incidents that drivers are being alerted about. This data allows for benchmarking as to how well drivers are heeding the warnings being issued by the device.

Integrating a visual collision avoidance solution with a telematics solution will make the fleet safety program more robust, giving insight into how well driver behaviour is improving due both to training and the presence of the alerts.

"Prior to installing Mobileye we put dashcam in our vehicles as a first measure, but they were great after the fact. We were seeing what happened in a collision but it wasn't necessarily curbing incidents, accidents and collisions."

CEO Neal Kalish, President and Owner of Ambu-Trans Ambulette

The Visual Advantage

Having a traditional camera system or telematics solution will help fleets capture and record data and find areas where their safety programs need strengthening. However, an AI-powered visual system, which unlike a video recorder doesn't record data, is designed to alert the driver in real time and avoid the collision altogether, thus, keeping the driver safe in the present, and potentially eliminate the need for recording.

With an active, AI-powered visual system, the driver is alerted in real time — with enough time to react — which helps to reframe the driver's focus from a distraction to his or her main function of driving.

While a safety program should include strong policies and a full menu of tactics and technologies — on a day-to-day basis, a visual anti-collision system will be the primary tool to strengthen and reinforce the safety mind-set with regular alerts. As a result, distracted or risky driving behaviour will be minimised through the reinforcement the alerts provide, and drivers will start avoiding situations when an alert will sound, anticipating them instead. The effects of emergent situations, a cyclist who is darting in and out of traffic or a pedestrian in a crosswalk, will be minimised.

Taken together, having an AI-powered visual anti-collision system at the core of a fleet's safety program will result in avoiding collisions and their downsides — human and financial — in the first place.

More importantly for the fleet, by avoiding collisions altogether it:

- Keeps its drivers safe and productive.
- Avoids unnecessary maintenance.
- Minimizes downtime.
- Doesn't have to deal with the headaches related to liability and deep-pocket lawsuits.
- Increases the bottom line by decreasing direct and indirect costs related to a collision.
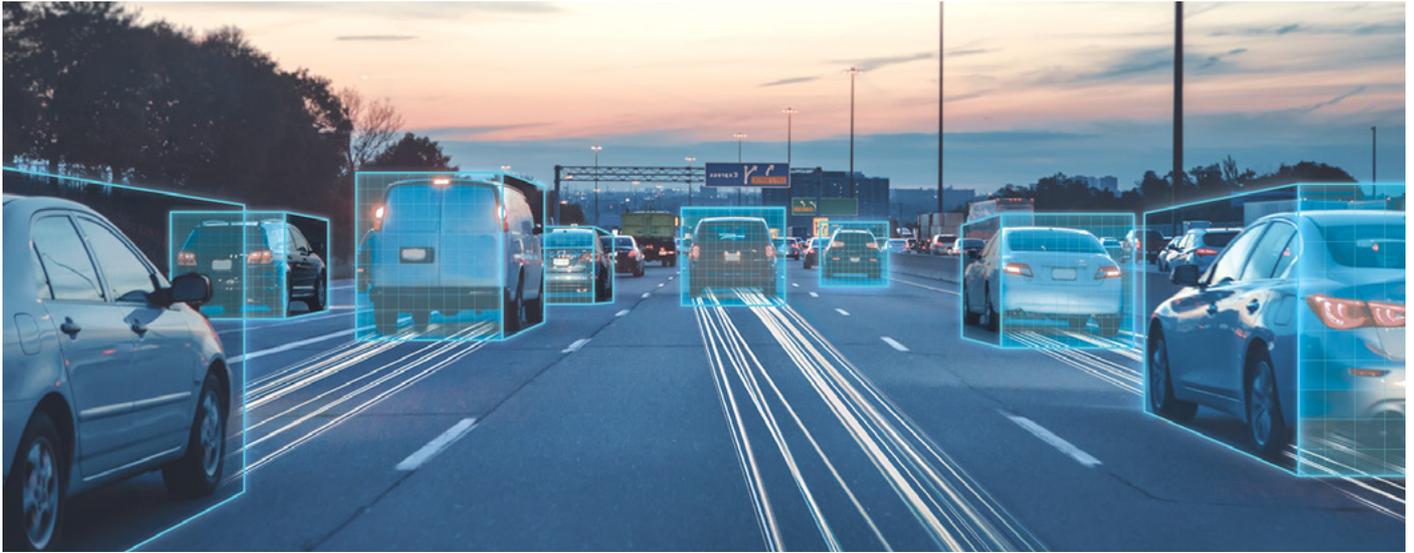
Mobileye: The Visual Choice

Collision avoidance isn't just a theory; it's a reality with Mobileye.

The AI-powered visual collision avoidance solution provides drivers with actionable alerts on a variety of emergent situations, including:

- Forward collision warning and urban forward collision warning

- Lane departure warning

- Following time warning, i.e., following too closely

- Speed limit indicator for the posted speed limit

Mobileye is easy to install, and many features can be customised to a fleet's preferred settings. Calibration and customisation (such as specific following distance settings) are handled by Mobileye's tech team. It's important to note that the unit does not tie into the engine or other systems physically, so there's no way it will compromise the functioning of the vehicle.

Mobileye is a driver-centric system. In other words, an alert will not be followed by the vehicle braking or taking other corrective action. It is up to the driver to take heed of the alert and act in order to avoid a collision. On its own, Mobileye does not record the driver in any way.

Having a visual anti-collision system, such as Mobileye, will truly turn a safety program from an accident management model based on retrospective analysis to a proactive, collision avoidance program. This will keep drivers and others safe, minimise downtime and liability, and help maximise productivity.

To learn how to take your safety program visual, contact Mobileye at: www.mobileye.com/fleets.

About Mobileye

Since 2007 our proprietary software algorithms and EyeQ® chips have empowered vehicle manufacturers to improve safety, performing detailed interpretations of the road ahead to anticipate potential collisions with cars, trucks, motorcycles, pedestrians, and bicyclists.

Mobileye's trusted solutions continue to be integrated into new vehicle models, with planned implementation into for 313 models from 27 vehicle manufacturers.

Mobileye also offers an aftermarket Advanced Driver Assistance System that leverages the algorithms and EyeQ chips used in new vehicles. This aftermarket system can be installed in almost any vehicle, making it an ideal solution for fleets looking to improve safety.

- 100+ distributors around the world
- 40+ million vehicles use Mobileye technology
- International Fleet Industry Award 2011 & 2013

Learn More

For more information about implementing Mobileye collision avoidance systems, visit www.mobileye.com/fleets or contact Jason.Bloom@mobileye.com.

Endnotes

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3   "10 Ways to Minimize Distracted Driving." Knight, Cheryl. Automotive-fleet.com. December 11, 2018. www.automotive-fleet.com/320993/10-ways-to-minimize-distracted-driving. Accessed April 24, 2019.

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6   Singh, S. (2015, February). Critical reasons for crashes investigated in the National Motor Vehicle Crash Causation Survey. (Traffic Safety Facts Crash•Stats. Report No. DOT HS 812 115). Washington, DC: National Highway Traffic Safety Administration.

7   U.S. Department of Transportation, National Highway Traffic Safety Administration. (2006). The 100-Car Naturalistic Drive Study: Phase II—Results of the 100-Car Field Experiment (DOT HS 810 593). Springfield, VA: National Technical Service.