

NEW SAFETY STANDARDS TO HIT THE ROAD

New vehicles sold in Europe will be fitted as standard with a range of new safety features, starting in 2022, according to a provisional EU deal on the legislation. Laurence Atchison, Project Manager with the European Transport Safety Council, outlines the range of road safety proposals designed to clamp down on the rising number of road collisions and deaths.

In 2018, 25,100 people were killed on Europe's roads, with an estimated 135,000 seriously injured. Despite significant progress in reducing road deaths in the early 2000s, progress has stagnated in recent years, with almost no change since 2013.

In an attempt to reverse the downward trend, the European Union looked at a range of road safety proposals designed to tackle some of the root causes of road collisions and deaths. The result came in the form of the 'Third Mobility Package' in May 2018, in which the European Commission outlined new rules for the type approval of vehicles and the management of Europe's road infrastructure.

Minimum vehicle safety requirements have been set by the European Union for some time, but they were last revised in 2009. Since then there have been many changes and innovations in vehicle safety technologies, many of which are now offered as optional extras by car manufacturers.

The Commission's proposal was to make the most effective of these new systems mandatory on all new vehicles, while at the same time tightening up the rules for existing safety systems and measures.

GREEN LIGHT TO NEW PLANS

Despite political wrangling over the past year, the European Parliament gave the green light to the new plans of this mandate, following a provisional deal reached by the EU institutions. The provisional deal, which was recently reached in Strasbourg, remains subject to formal votes in the European Parliament and by EU Member States.

The aim of the package of measures is to both avoid collisions and mitigate the consequences of those that do occur. Each measure is intended to complement the others, leading to a safety benefit that is greater than the sum of its parts.

Some have been made mandatory on all vehicles, whereas some are just for cars and vans, or for trucks and buses. In total, the package is expected to save 25,000 lives and avoid at least 140,000 serious injuries by 2038, making it the biggest step forward in road safety since the introduction of the seatbelt.



PRIORITY TECHNOLOGIES

The new rules include requirements for the following technologies:

*Intelligent Speed Assistance (ISA)

Intelligent Speed Assistance (ISA) helps drivers comply with speed limits. It uses GPS, a database of speed limit locations as well as sign-recognition cameras to automatically limit a vehicle's speed. Several studies have found that the benefits substantially outweigh the costs. This will be on by default at the start of each trip, but will be over-ridable by the driver.

*Automated Emergency Braking (AEB)

Automated Emergency Braking (AEB) systems, which detect pedestrians and cyclists, can help avoid crashes or mitigate their severity by warning the driver and supporting braking response and/or applying the brakes independently of the driver.

*Alcohol Interlock Interface

Alcohol interlocks are connected to the vehicle ignition system and require the driver to take a breath test in order to drive the vehicle. If the driver is found with alcohol above the national legal Blood Alcohol Concentration (BAC) limit the engine will not start. The current proposal is just for an interlock interface which will make it easier to install an alcohol interlock for those who need one.

EU ROAD SAFETY



*Lane Keep Assistance (LKA)

Lane Keep Assistance (LKA) systems help the driver to stay in their lane. They function at speeds typically from 65 km/h and work by monitoring the position of the vehicle with respect to the lane boundary, typically via a camera mounted behind the windscreen sited behind the rear view mirror. When the vehicle drifts out of the lane the LKA system gently guides the vehicle back into the lane by the application of torque to the steering wheel or one-sided braking.

*Distraction and Fatigue

Driving whilst using a mobile phone and other electronic devices significantly impairs driving ability and it is thought to play a role in 20-30% of all road collisions. There is a long list of distractions, mainly in-vehicle distractions that undermine the driver or the rider's ability to perform the driving task. Fatigue is also a road safety challenge.

A wide range of systems can be used to identify distraction or drowsiness in drivers in order to minimise collisions. Systems may employ physiological monitoring, physical monitoring or behavioural indices and patterns.

* Event Data Recorders (EDR)

Event Data Recorders (EDR) record a range of vehicle data over a short timeframe before, during and after a triggering event (such as an airbag being deployed), and are typically used to record information about RTCs, which cannot be reliably identified by the usual police investigations.

Most new cars and vans have EDR functionality already

ABOUT THE AUTHOR

Laurence Atchison is Project Manager with the European Transport Safety Council (ETSC). He joined ETSC in 2017 and works on the REVIVE project on post-collision response and ETSC's work-related road safety programme, PRAISE. He has previously worked as a senior researcher at the UK Parliamentary Advisory Council on Transport Safety (PACTS) and as a researcher in the UK Parliament.



although the data it not easily accessible. The new EDRs will record the status of all in-car safety systems (when fitted) in the moments leading up to a collision, and also record data surrounding a collision with a pedestrian or cyclist.

*Increased protection for pedestrians and cyclists

A key part of the new package is focus on improving the road safety of people outside vehicles. The share of deaths of unprotected road users is increasing as car occupants have been the main beneficiaries of improved vehicle safety in recent years.

A focus on vulnerable road users is now needed. Pedestrians represent around 21% of total EU road deaths – around two thirds of these occur in urban areas, while cyclists comprise around 8% of total EU road traffic deaths.

Systems designed specifically to help protect vulnerable road users have been combined with improved crash tests that will help to improve the survival chances for somebody outside of a vehicle who is involved in a collision.

In particular, the introduction of a 'Direct Vision' standard will help to improve the design of HGVs, thereby enabling drivers to see more from the cab. This is an issue of growing importance given the increasing interaction between vehicles, pedestrians and cyclists in heavily-populated areas.

LOOKING TO THE FUTURE

Many driving technologies are already active on our roads, and once the new legislation begins to take effect they will become even more commonplace.

As well as saving lives and preventing injuries now, they also represent an important step in introducing drivers to the type of features needed for automated and autonomous vehicles. Similarly, introducing features such as Intelligent Speed Assistance will help to ensure that vehicles in the future are capable of obeying the rules of the road.

However, driverless cars remain an issue for the future and we must be careful of assuming they will be a road safety panacea. By focusing on today's proven technologies and combining them with improved infrastructure safety standards, the EU is demonstrating that it is possible to make a difference, using the vehicles and systems available today.

Committing to this raft of life-saving measures will help to reboot the reduction in road deaths and consolidate Europe's position as a leader in road safety.