HOW TRAFFIC LAW ENFORCEMENT CAN CONTRIBUTE TO SAFER ROADS

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The PIN programme relies on panellists in the participating countries to provide data for their countries and to carry out quality assurance of the figures provided. This forms the basis for the PIN Flash report and other PIN publications. In addition, all PIN panellists are involved in the review process of the reports to ensure the accuracy and reliability of the findings.

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ABOUT THE EUROPEAN TRANSPORT SAFETY COUNCIL (ETSC)

ETSC is a Brussels-based independent non-profit organisation dedicated to reducing the numbers of deaths and injuries in transport in Europe. Founded in 1993, ETSC provides an impartial source of expert advice on transport safety matters to the European Commission, the European Parliament, and member states. It maintains its independence through funding from a variety of sources including membership subscriptions, the European Commission, and public and private sector support.

ABOUT THE ROAD SAFETY PERFORMANCE INDEX PROJECT

ETSC's Road Safety Performance Index (PIN) programme was set up in 2006 as a response to the first road safety target set by the European Union to halve road deaths between 2001 and 2010. In 2010, the European Union renewed its commitment to reduce road deaths by 50% by 2020, compared to 2010 levels.

By comparing member state performance, the PIN serves to identify and promote best practice and inspire the kind of political leadership needed to deliver a road transport system that is as safe as possible.

The PIN covers all relevant areas of road safety including road user behaviour, infrastructure and vehicles, as well as road safety policymaking. Each year ETSC publishes PIN 'Flash' reports on specific areas of road safety. A list of topics covered by the PIN programme can be found on http://etsc.eu/projects/pin/.

How traffic law enforcement can contribute to safer roads is the 31st PIN Flash report edition. The report covers 32 countries: the 28 member states of the European Union together with Israel, Norway, the Republic of Serbia and Switzerland.

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INTRODUCTION
THE ROLE OF ENFORCEMENT

Exceeding speed limits, drink or distracted driving and failure to wear a seat belt are still the leading causes of death and serious injury on European roads.[1] Despite legislation designed to prevent all four, many drivers involved in fatal traffic collisions clearly failed to comply with one or more road traffic laws at the time of their collision.

Enforcement of road traffic laws is an essential component in preventing death and injury.

Exceeding the speed limit is by far the most recorded road traffic offence. Excessive or inappropriate speed is a primary factor in about one third of road deaths and an aggravating factor in many more.[2] Drink driving causes as much as 25% of all road deaths in the EU.[3] ETSC estimates that 900 car occupant deaths would have been prevented in 2012 if 99% of those in cars in collisions had been wearing safety belts.[4] Driver distraction, including mobile phone use, is increasingly a factor in fatal collisions.[5]

Enforcement of road traffic laws is an essential component in preventing death and injury. Safety laws have been adopted to guide drivers in their behaviour. Many comply with them willingly. Others, however, would not comply if it were not for fear of being detected and sanctioned. This is where traffic law enforcement comes in.

Enforcement is based on giving drivers the feeling that they are likely to be caught and punished when breaking the rules.

Enforcement is based on giving drivers the feeling that they are likely to be caught and punished when breaking the rules. Efficient enforcement strategies are, therefore, not about increasing the amount of fines, but about increasing the chance of being caught as perceived by the drivers.[6]

The frequency of police checks determines the objective chance of being caught. Based on the objective chance and what they read in newspapers or hear from friends or colleagues, drivers estimate their own chance of being stopped for a traffic offence (the 'subjective' chance of being caught).[7] When drivers perceive this chance as being sufficiently high, they will avoid committing traffic offences.

The effectiveness of enforcement is better if police controls:

- are accompanied by sufficient publicity;
- take place regularly over a long period;
- are unpredictable and difficult to avoid;
- combine highly visible and less visible activities;
- focus on traffic offences that have a direct, proven relationship with collisions or their severity (e.g. speeding, drink and drug driving, failure to wear a seat belt, red-light running, close following, mobile phone use…);

[1] ETSC (2010), 4th Road Safety PIN Report, Chapter 3, Tackling the Three Main Killers on the roads, http://goo.gl/Qy7Kp0
[2] SafetyNet (2009), Speeding (retrieved May 2016), http://goo.gl/x8c3s2
[3] ETSC (2014), PIN Flash Report 27, Ranking EU Progress on Car Occupant Safety, http://goo.gl/tfiaxS
[4] Ibid.
[5] TRL, TNO, Rapp Trans (2015), Study on good practices for reducing road safety risks caused by road user distractions, EU funded study, http://goo.gl/dhpCzW
[6] ETSC (2004), Fact Sheet Traffic Law Enforcement; ETSC (2011), Traffic Law enforcement, Tackling the Three Main Killers on Europe's Roads and ETSC (2007), Traffic Law Enforcement across the EU.
[7] Van Schagen I, Machata, K. (2010), Handbook of Best Practice Measures in Road Safety, SUPREME, EU funded project, http://goo.gl/UvJQlW

- take place at locations and at times where violations are expected to have the most effect on safety[8];
- are followed by a sanction that is effective, proportionate and dissuasive (e.g. financial penalty, retraining course, alcohol interlock-based drink driver rehabilitation programmes).

Enforcement is not about raising revenues, it is about saving lives and preventing injuries.

Improvements in traffic law enforcement should be part of an integrated road safety policy and have been shown to lead to rapid reductions in deaths and injuries when applying best practice.

Consistent enforcement activities that are well explained and publicised also have a long-lasting effect on driver behaviour.[9] The results of the latest Eurobarometer survey on road safety show that Europeans not only recognise the danger of the main risky behaviours in road traffic, but also expect more policy actions to address them. The majority of citizens polled would like to see more action on enforcement of drink driving and speeding, including of non-residents, as priority issues.[10]

Traffic law enforcement is a very cost-effective means of enhancing road safety. The benefits of applying existing best practice to the whole of the EU exceed the costs by a factor of 4 in the case of drink driving and 10 in the case of seat belt use.[11]

However, in most countries, the scarce resources allocated for enforcement are not always used optimally. Much of the knowledge and good practice in place in the best performing and fastest progressing countries have yet to be translated in PIN countries[12] into long-term strategies that effectively change road user behaviour, reduce the risk of collision or reduce injury severity.

Under the EU Recommendation adopted in 2004, EU countries were advised to set up national enforcement plans containing a strategy on enforcement activities in at least three areas of non-compliance – speeding, drink driving and failure to wear a seat belt[13]. However, to ETSC's knowledge, only Croatia, the Czech Republic, Cyprus, France, Finland, Greece, Ireland, Romania and Spain have some kind of national enforcement strategies in place, together with Israel, Switzerland and Serbia.[14]

Worryingly, in several countries, the number of police officers on the roads enforcing driving laws has dropped, following pressure to reduce public spending. Priorities set for the police might change and traffic law enforcement risks slipping further down the list of priorities. As a result, in some countries, there is little chance of law-breakers being detected and sanctioned for offences other than speeding or running a red light, offences typically enforced via safety cameras.

"It is likely that because the police in Germany have been increasingly dealing with security-related matters and refugees, the level of traffic law enforcement activities has been going down. It is crucial that the financial and human resources of the police are increased so that traffic law enforcement is not neglected as a result of pressure from other tasks." Jacqueline Lacroix, German Road Safety Council

[8] SafetyNet (2009), Speeding (retrieved May 2016), http://goo.gl/x8c3s2
[9] ETSC (2015), Enforcement in the EU – Vision 2020, http://goo.gl/5NFGNW
[10] European Commission (2010), Road Safety Analytical report, http://goo.gl/1j1yOW
[11] ETSC (2007), Traffic Law Enforcement Across the EU – Time for a Directive, http://goo.gl/PQkZY6
[12] 32 countries including all 28 EU member states, Israel, Norway, Serbia and Switzerland. See page 2.
[13] European Commission Recommendation of 6 April 2004 on Enforcement in the Field of Road Safety (2004/345/EC), http://goo.gl/RONIi2
[14] For example, in Greece, the Strategic Plan for the improvement of road safety (2011-2020) includes two targets for enforcement activities: every year, 1 in 4 drivers should be checked for compliance with speed limits and 1 in 4 drivers for drink-driving.

Enforcement and the EU

The EU has adopted a Directive on Cross Border Enforcement (CBE) of road traffic offences[15]. The goal is to improve road safety by supporting enforcement of road traffic rules for non-resident offenders. The Directive covers the main offences that cause road death and serious injury in the EU.[16]

The European Commission is due to submit a progress report to the European Parliament and the EU member states on the application of the Directive by November 2016. The deadline for implementation in member states was May 2015 [17]. Preliminary data show that the use of the Directive varies greatly among countries. Although they may record traffic offences committed by non-residents, countries do not necessarily send a ticket to the offender who lives abroad (see section 5).

Later this year, the European Commission is also due to revise the General Safety Regulation 2009/661[18] which sets minimum safety requirements for all new vehicles sold in the EU. The revision of the Regulation offers a unique opportunity to increase car occupant compliance with traffic rules by mandating self-enforcing technologies as standard in all new vehicles. These life-saving technologies include overridable Intelligent Speed Assistance, Intelligent Seat Belt Reminders on all seats and a standardised interface for alcohol interlock fitment.

INDICATOR

Main indicators

This report aims to compare the levels of traffic law enforcement between member states. It uses as its main indicators the annual number of speeding tickets (Table 1), road side alcohol breath tests (Table 2), tickets for non-use of seat belt (Table 3) and for illegal use of a mobile phone (Table 4) per head of population. It also uses as indicators an annual change (in %) in the number of speeding tickets (Fig.1), drink driving checks (Fig.3), tickets for non-use of seat belt (Fig.7) and illegal use of a mobile phone (Fig.8).

The ideal indicator on how to assess the level of enforcement of speeding would be to compare countries on the basis of time spent on speed enforcement or checks performed both by the police and by safety camera (e.g. GoSafe, the service provider contracted by the Irish Police, has to provide a minimum of 72,000 hours of speed enforcement per year). Unfortunately this indicator is not available in most other countries.[19] This report uses the number of tickets per thousand inhabitants, assuming that they are broadly proportionate to the level of enforcement activity.

This report also includes the number of safety cameras per million inhabitants (Fig.2) and the proportion of speeding tickets that were generated by safety cameras (Table 1). Data on offences committed by non-residents are limited and available only in Belgium, France, Hungary, Lithuania, the Netherlands, Poland and Spain.

The data used in the report were provided by the PIN panellists and the police. No information was received from Bulgaria or Malta. Data from Luxembourg could not be provided in the format required in this report. Data are not available nationwide for Italy, Spain and the UK, available data were used for these countries. Population data were retrieved from the Eurostat database. The full dataset is available in the Annexes.

The analysis builds on previous country rankings on the levels of enforcement in ETSC's 4th (2010) and 6th (2012) Road Safety PIN reports. Data on the total number of deaths and serious injuries up to 2015 are available in ETSC's 10th (2016) PIN Annual Report. These publications can be downloaded from www.etsc.eu/pin.

[15] Directive (EU) 2015/413 of the European Parliament and of the Council facilitating cross-border exchange of information on road-safety-related traffic offences, http://goo.gl/JF1bAW

[16] Eight major road safety related offences are included in the text of the EU Directive: speeding; not using a seat belt; not stopping at a red light or other mandatory stop sign; drink driving; driving under the influence of drugs; not wearing a safety helmet (for motorcyclists); using a forbidden lane (such as the use of an emergency lane, a lane reserved for public transport, or a lane closed down for road works); illegally using a mobile phone, or any other communications device, while driving.

[17] Three countries (the UK, Ireland and Denmark) have a later transposition deadline of May 2017.

[18] Regulation (EC) No 661/2009 of the European Parliament and of the Council of 13 July 2009 concerning type-approval requirements for the general safety of motor vehicles, their trailers and systems, components and separate technical units intended therefor, http://goo.gl/G7nFh6

[19] Garda, Ireland's National Police Service, http://goo.gl/5rNlxG

EXECUTIVE SUMMARY

Exceeding speed limits, drink or distracted driving and failure to wear a seat belt are still the leading causes of death and serious injury on European roads. Despite legislation designed to prevent all four, many drivers involved in fatal traffic collisions clearly failed to comply with one or more road traffic laws at the time of their collision.

Improvements in traffic law enforcement should be part of an integrated road safety policy and have been shown to lead to rapid reductions in deaths and injuries when applying best practice.

Speeding

Excessive or inappropriate speed is a primary factor in about one third of road deaths and an aggravating factor in many more.

Speed enforcement will remain essential as long as the speed problem is not solved in a structural way by road design, engineering measures and in-vehicle technology. Efficiency of speeding enforcement is enhanced if the handling of fines for detected violations is largely automated. Efficiency is also higher if the vehicle owner and not the vehicle driver is held liable, since it is easier and faster to identify the owner than the driver.

It is argued that speed enforcement is most appropriate on specific road stretches where collisions are concentrated. Such targeted action brings road safety benefits in the most dangerous road sections and makes it easier to explain the reasons of enforcement to the general public.

In general, there appears to be an overall increase in speed offences detected throughout the EU, mainly due to the extension of safety camera networks, in particular in Central and Eastern European countries.

Out of the 22 countries that could provide data on the number of speeding tickets issued over the period 2010-2015, the number went up in 14 countries, while 8 registered a decrease.

The number of speeding tickets has increased on average by 14% annually in Serbia, 10% in Lithuania and Estonia, around 9% in Poland, 8% in Portugal, 6% in Croatia and Denmark. All except two of these countries achieved better–than-average reductions in the number of road deaths over the same period. Serbia and Estonia have also reduced road deaths but not better than the EU average.

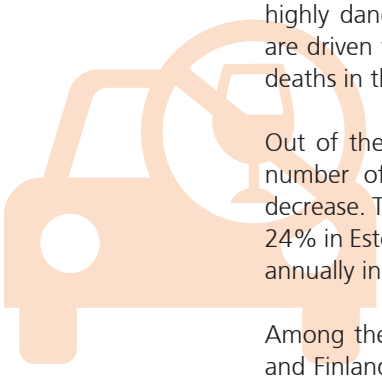
The annual number of speeding tickets dropped in Sweden, the Netherlands and Finland, countries that have also witnessed some of the biggest slow-downs in reducing road deaths since 2010.

Similarly, the UK and Germany have also seen a big slow-down in reductions of road deaths. In the UK, the number of tickets reduced after 2010 when the new government made cuts that affected enforcement levels; but ticket numbers have started to increase again.

As many as 70% of speeding offenders detected by safety camera do not receive a speeding ticket in Poland and Sweden and 29% of all speeding offenders in France. It is highly possible that other EU countries are facing similar challenges to follow up and sanction automatically-detected violations, but the majority of EU countries are either not collecting the data or not making them public.

Drink driving

While drink driving is relatively infrequent compared to other traffic offences, it is highly dangerous. It is estimated that up to 2% of kilometres travelled in the EU are driven with an illegal Blood Alcohol Concentration but around 25% of all road deaths in the EU are alcohol related.



Out of the 16 countries that could provide data over the period 2010-2015, the number of alcohol checks increased in eight countries and eight registered a decrease. The number of alcohol road-side checks grew by 39% each year in Poland, 24% in Estonia and 12% in Portugal. The number of alcohol checks dropped by 13% annually in Sweden, 10% in Cyprus and 5% in England and Wales.

Among the countries that could provide up-to-date data, police in Estonia, Poland and Finland are most active in the fight against drink driving with respectively 677, 466 and 279 driver checks per thousand inhabitants in 2015. The number of checks are also high in Austria (189) and Slovenia (156). The lowest probability of being checked for drink driving is in Lithuania and Romania with less than one hundred in a thousand inhabitants being checked for drink driving per year.

Research has shown that increased drink driving enforcement contributes to a decrease in drink driving deaths and injuries. Increases in the number of checks in 2014 and 2015 in Poland are starting to pay off.

Seat belt use

Despite the legal obligation to wear a seat belt across the EU28, seat belt use in cars in the EU is estimated to be only 90% for front seat and 71% for rear seat passengers in countries that are monitoring wearing rates. ETSC estimates that 900 deaths could have been prevented in 2012 if 99% of occupants had been wearing a seat belt, a rate that could be reached with seat belt reminders (SBR) on all car seats.

Seat belt wearing rates are highest in Germany, Sweden, GB and Estonia with 98% passengers in the front seat belting up. Seat belt wearing rates in front seats remain as low as 61% in Croatia, 62% in Italy, 74% in Serbia, 82% in Latvia and 83% in Hungary.

Disparities between countries are even bigger when it comes to wearing seat belts on rear seats: from 98% in Germany and the Czech Republic to only 1% in Croatia. Wearing the seat belt on rear seats is still exceptional in Serbia with 7% rear seat passengers belting up, in Italy (15%) and in Lithuania (33%). The biggest increase in the last five years in rear seat belt wearing rates were recorded in Austria, Estonia, the Czech Republic, Denmark and Sweden.

Despite the fact that the proportion of killed vehicle occupants who were not wearing their seat belt is disproportionately high, seat belt enforcement is not a primary target for the police in many EU member states. In some of them, it is still considered a minor violation that may not even be recorded or incorporated in demerit point systems.

The number of tickets for failure to wear a seat belt is highest in Serbia and Romania with 25 and 24 tickets per 1000 inhabitants, followed by Croatia with 23 tickets per 1000 inhabitants and Slovenia with 20 tickets per 1000 inhabitants last year.

Mobile phone use while driving

Distracted driving is a growing problem in road safety. Data on how many collisions involve distraction is poor but experts estimate that it plays a role in 10-30% of them. Studies also suggest that drivers using a mobile phone are approximately four times more likely to be involved in a collision than a driver not using a phone. There is a long list of distractions that undermine the driver's or the rider's ability to perform the driving task, but the use of mobile phones while driving appears to be widespread and growing.

Police enforcement, combined with publicity campaigns, has the potential to reduce illegal use of a mobile phone while driving. But even though the phenomenon of using a mobile phone while driving is widespread, enforcement levels remain low.

Out of 21 countries that provided data on the number of tickets for illegal use of mobile phone over the period 2010-2015, 8 countries saw an increase and 12 countries saw a decrease and in one country the number of tickets remained unchanged. in the number of tickets. The number of tickets for illegal use of mobile phones increased by 22% each year on average in Poland over the period 2010-2015, by 17% in Croatia, 12% in Serbia and 8% in Greece. In contrast, ticket numbers have declined over the same period in the Netherlands by 22% on average each year and by 20% in Cyprus.

More work is needed to improve the systematic collection of mobile phone use in collision data to assess the extent and distribution of a growing problem of driver distraction in countries. This will allow prevention efforts to be effectively targeted.

The Cross Border Enforcement Directive: work in progress

According to the European Commission, non-resident drivers account for approximately 5% of road traffic in the EU, but a foreign-registered car is around three times more likely to commit a traffic offence than a domestically-registered one.

The proportion of offences by non-resident road users is difficult to evaluate as only Belgium, France, Hungary, Lithuania, The Netherlands, Poland and Spain have sent data. Offences committed by foreign-registered vehicles represented 13% of all speeding offences detected by safety cameras over the period 2013-2015 in Poland. Differences in the proportion of non-resident drivers depend on the geographical position of the country (i.e. whether or not it is a transit country), the level of tourism in the country and the type of road section (international or local route).

As many as 99% of all offences committed by non-resident drivers detected by safety cameras were followed up in Hungary, 96% in the Netherlands. Only 8% were followed up by the Lithuanian authorities in 2015, 11% in Poland, 35% in Spain and 41% in France.

Main recommendations to Member States

- Set enforcement plans with yearly targets for numbers of checks and compliance with traffic laws, in particular addressing the priority areas of speeding, drink and drug driving, illegal use of mobile phone, red-light running, failing to wear seat belts, child restraints or helmets. Share those enforcement plans with the European Commission to facilitate the exchange of best practice on enforcement across the EU.
- Adhere to a 'zero tolerance' approach for enforcing priority areas of road safety legislation, as mentioned above.
- Run annual enforcement campaigns, coordinated with information activities involving other stakeholders, and making use of social media.

- Set up a transparent system for the allocation of revenues generated by fines and channel revenues from enforcement back into road safety work.
- Set up and implement a demerit point system which includes a set of fixed penalties for at least the eight major road safety related offences included in the Directive 2015/413 concerning cross-border exchange of information on road safety related traffic offences as recommended by the research project BESTPOINT.[20]
- Participate in TISPOL cross border enforcement actions.[21]
- Collect and monitor the enforcement effort and the number of offences over time by violation type. Collect and monitor number of relevant fatal collisions in order to be able to evaluate progress against objectives in the enforcement plans.
- Publish the efforts (e.g. number of checks) and results (number of violations detected and sanctioned) of dedicated enforcement actions on the relevant police websites.

Main recommendations to the EU

Within the context of the revision of Directive 2015/413 concerning cross-border exchange of information on road safety related traffic offences:

- Revise the Directive to strengthen the enforcement chain, including mandatory notification by the country of offence of the owner of the vehicle.
- In case of non-payment of fines, encourage member states to apply the Council Framework decision 2005/214 on the principle of mutual recognition to financial penalties.
- Recast the Framework Decision 2005/214 to include civil/administrative offences as this would provide an important final part in the enforcement chain.
- Publish best practice guidelines on enforcement and sanctions in the field of road safety and thereby encourage member states to achieve high standards on enforcement methods and practice and a greater convergence of road-safety-related traffic rules building on the EC Recommendation on Enforcement in the field of Road Safety. Promote sanctions that are effective, proportionate and dissuasive.
- Develop common minimum standards on enforcement equipment.
- Collect and publish EU countries' enforcement plans to facilitate the exchange of best practice on enforcement across the EU and work towards developing a common road safety enforcement strategy as outlined by the Road Safety Policy Orientations 2011-2020 under Objective 2.[22]

Within the context of the revision of Regulation 2009/661 concerning Type-Approval Requirements for the General Safety of Motor Vehicles:

- Adopt legislation for fitting all new vehicles with an overridable assisting Intelligent Speed Assistance system.
- Extend the mandatory fitment of advanced seat belt reminders as standard equipment to all seats.
- As a first step towards wider use of alcohol interlocks, legislate their use by professional drivers and ensure that such a device can be fitted easily to all new vehicles through implementation of a standard interface.

[20] Van Schagen I., Machata K. (2012), The BestPoint Handbook: Getting the best out of a Demerit Point System. EU funded project, http://goo.gl/XX5u7d
[21] TISPOL STRIDER project, https://goo.gl/v6HUIM
[22] European Commission (2010), Towards a European road safety area: policy orientations on road safety 2011-2020, http://goo.gl/hU5jnw

PART I
SPEED ENFORCEMENT

Speed enforcement aims to prevent drivers exceeding the speed limit by penalising those that do. This not only affects the speed of those that actually get caught (specific deterrence), but also those who see or hear that others have been caught (general deterrence). Speed enforcement will remain essential as long as the speed problem is not solved in a structural way by road design, engineering measures and in-vehicle technology.[23]

Tackling speeding takes a combination of measures including enforcement, education, safe and credible speed limits, combined with 'self-explaining' and 'forgiving' roads, 'self-enforcing' roads and vehicles.[24] A combination of mobile road-side police checks together with automated enforcement, including mobile and fixed cameras, as well as time-over-distance cameras, has proved to be an effective tool in addressing speeding.[25]

Speed enforcement will remain essential as long as the speed problem is not solved in a structural way by road design, engineering measures and in-vehicle technology.

Efficiency is further enhanced if the handling of fines for detected violations is largely automated. Efficiency of automatic enforcement is higher if the vehicle owner and not the vehicle driver is held liable, since it is easier and faster to identify the owner than the driver.

It is argued that speed enforcement is most appropriate on specific road stretches where collisions are concentrated. Such targeted action brings road safety benefits in the most dangerous road sections and makes it easier to explain the reasons of enforcement to the general public. It is important that enforcement is perceived as a necessary road safety measure, not a fund raising activity.[26]

Whereas enforcement should focus on roads with a poor safety record, it should not be limited to one road category. It is important that drivers become aware that surveillance exists everywhere, especially on roads with high traffic volumes so that enforcement is visible for many road users.[27]

With moderate levels of enforcement but a high-perceived chance of being caught thanks to good communication, a Demerit Point System is likely to have an effect on driver behaviour that is stronger than the effect of enforcement alone.[28]

Drivers' perception of being caught for a speeding offence remains low in the EU. According to the SARTRE survey, more than half of respondents think they are highly unlikely to be caught speeding. In Sweden, 77% of respondents think they will not be checked for speeding, the figure is 71% in Finland and Germany.[29] In contrast, in Spain, only 35% of respondents think they won't be checked on a normal trip, with 41% in the Czech Republic and 44% in Slovenia and Estonia.

[23] ETSC (2016), PIN Flash Report 30, How safe are new cars sold in the EU?, http://goo.gl/2NJ6YW; PIN Flash Report 27, Ranking EU Progress on Car Occupant Safety, http://goo.gl/tfiaxS
[24] European Commission, Speed limits, http://goo.gl/q3eFFq
[25] SWOV Fact Sheet (2009), Speed cameras: how they work and what effect they have, http://goo.gl/PYtqd0, and PACTS (2003), Speed cameras. 10 criticisms and why they are flawed, http://goo.gl/NJvUUt
[26] OECD (2006), Speed Management, http://goo.gl/jUWOyt
[27] Ibid.
[28] Van Schagen I, Machata, K. (2012), The Best Point Handbook, Getting the best out of a Demerit Point System. EU funded project, http://goo.gl/XX5u7d
[29] SARTRE 4, European Road Users' Risk Perception and Mobility, http://goo.gl/2hOX5Z

1.1 Dynamics in speed enforcement levels

In this report it is assumed that an increase in the number of speeding tickets in a country indicates an increase in enforcement activities.[30]

In general, there appears to be an overall increase in speed offences detected throughout the EU, mainly due to the extension of safety camera networks, in particular in Central and Eastern European countries.

Out of the 22 countries that could provide data on the number of speeding tickets issued over the period 2010-2015, the number went up in 14 countries, while 8 registered a decrease.

Countries where the numbers of speeding tickets have increased have achieved better-than-average reductions in road deaths.

The number of speeding tickets has increased on average by 15% annually in Italy, 14% in Serbia,10% in Lithuania and Estonia, around 9% in Spain and Poland, 8% in Portugal, 6% in Croatia and Denmark. All except two of these countries achieved better–than-average reductions in the number of road deaths over the same period. Serbia and Estonia have also reduced road deaths but not better than the EU average.[31]

The annual number of speeding tickets dropped in Sweden, the Netherlands and Finland, countries that have also witnessed some of the biggest slow-downs in reducing road deaths since 2010.

Similarly, in GB and Germany have also seen a big slow-down in reductions of road deaths. In the UK, the number of tickets reduced after 2010 when the new government made cuts that affected enforcement levels; but ticket numbers have started to increase again.

Unfortunately, the number of speeding tickets issued is not available in Germany, as in many other countries. This deprives policymakers of a key indicator of the effectiveness of measures to reduce speeding.

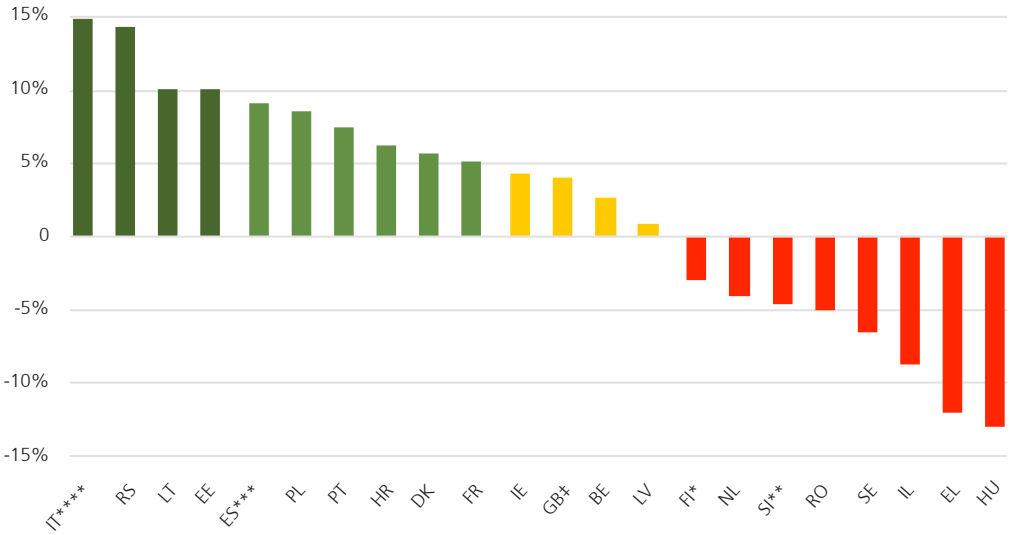


Fig.1 Annual change (in %) in the number of speeding tickets over the period 2010-2015. ‡Total number of speeding tickets and sanctions imposed as an alternative to a speed ticket in England and Wales over the period 2011-2015. *Written warning letters and fines, petty fines and crime reports are included. **Fines following traffic collisions are included. ***Data on the number of tickets following checks on roads in urban areas and in the region of the Basque country are not available. Data from Catalonia cover checks on all roads. ****Speed tickets following checks by national police, Carabinieri and police in main cities (provincial capitals). BE, EL, LV, PT: 2010-2014 data.

[30] ETSC (2010), 4th Road Safety PIN Report, Chapter 3, Tackling the Three Main Killers on the roads, http://goo.gl/Qy7Kp0

[31] ETSC 10th PIN Annual Report to be published on the 20th of June 2016.

1.2 Speed enforcement levels by country

The methods and the levels of speed enforcement differ greatly between EU member states (Table 1). Drivers in the Netherlands receive 23 times more tickets per year for speeding than drivers in Sweden.

Among countries that could provide current data, annual numbers of speeding tickets per capita are the highest in the Netherlands, Belgium and France, where safety cameras have been used extensively. Four out of ten inhabitants in the Netherlands received a speeding ticket in 2015. In contrast, being fined for speeding is rather the exception in Greece, Israel, Sweden, Portugal and Hungary with less than 30 tickets per thousand inhabitants.

The level of compliance, and, therefore, the level of tickets, might also depend on the type of road and its speed limit. For example, rural roads with similar design characteristics might have different legal speed limits in different countries. In countries where speed limits are higher, compliance might be better, compared to countries where the speed limit is lower, even if observed average driving speeds might be similar in both countries. Speed limits should be safe and credible and adjusted to the road design, its function and use.

Table 1. Total number of speeding tickets per 1000 inhabitants (by both police roadside checks and safety cameras) and the proportion (in %) of those that were sent after an offence was detected by safety camera. ***Written warning letters and fines, petty fines and crime reports are included. ****Fines following traffic collisions are included. *Data on the number of tickets following checks on roads in urban areas and in the region of the Basque Country are not available. Data from Catalonia covers checks on all roads. **Speeding tickets following checks by National Police. **†IT speed tickets following checks by national police, Carabinieri and police in main cities (provincial capitals). †Number of speeding tickets and population data for England and Wales only. ‡The figures of those attending the NDORS courses (see below) in England, Wales and Northern Ireland are added to the speeding tickets to give a true reflection of the enforcement activity within the UK.

Yearly speed tickets per 1000 inhabitants												
	2015		2014		2013		2012		2011		2010	
	Number of speeding tickets	Proportion by safety camera (in %)	Number of speeding tickets	Proportion by safety camera (in %)	Number of speeding tickets	Proportion by safety camera (in %)	Number of speeding tickets	Proportion by safety camera (in %)	Number of speeding tickets	Proportion by safety camera (in %)	Number of speeding tickets	Proportion by safety camera (in %)
NL	393	99.6%	400	99.1%	503	99.2%	454	99.2%	445	98.8%	501	98.5%
BE	n/a		300	n/a	285	n/a	271	n/a	296	n/a	259	n/a
FR	205	93.5%	195	93.0%	176	91.9%	193	91.8%	165	89.8%	156	89.7%
CY	108	29.2%	89	13.9%	84	n/a	133	n/a	112	n/a	103	n/a
EE	102	65.7%	95	65.1%	76	57.5%	71	46.7%	81	54.3%	58	39.8%
FI***	93	80.4%	76	81.4%	83	72.9%	80	79.2%	98	77.3%	100	74.8%
DK	73	90.9%	47	80.3%	59	87.2%	47	83.8%	51	84.8%	50	85.4%
HR	66	n/a	62	n/a	51	n/a	51	n/a	52	n/a	48	n/a
PL	50	17.1%	55	20.3%	46	15.0%	43	7.7%	41	2.3%	35	n/a
LV	n/a		50	n/a	45	n/a	31	n/a	47	n/a	47	n/a
LT	50	98.2%	51	98.3%	40	98.1%	30	97.7%	29	98.1%	38	98.9%
IE	49	n/a	48	n/a	45	n/a	49	n/a	57	n/a	35	n/a
SI****	44	n/a	48	n/a	42	n/a	35	n/a	51	n/a	61	n/a
RO	38	n/a	39	0.6%	43	2.4%	38	2.5%	53	3.0%	46	2.7%
RS	37	n/a	25	n/a	19	n/a	16	n/a	15	n/a	20	n/a
HU	28	85.0%	29	75.8%	30	77.3%	46	89.7%	43	100.0%	54	n/a
PT	n/a		25	n/a	23	n/a	25	n/a	22	n/a	18	n/a
SE	17	48.1%	19	35.9%	21	30.5%	22	33.7%	22	24.1%	24	24.0%
IL	17	73.0%	12	64.7%	17	71.8%	13	56.7%	19	8.2%	26	16.6%
EL	n/a		14	n/a	16	n/a	17	n/a	21	n/a	24	n/a
MT	n/a								81	n/a	103	n/a
SK	n/a								49	n/a	45	
LU	n/a								42	n/a	41	n/a
Data available for tickets on part of the road network only												
IT**†	44	n/a	46	n/a	25	n/a	24	n/a	24	n/a	25	n/a
IT**	13	85.2%	12	81.9%	12	82.0%	14	82.1%	17	84.2%	16	82.8%
GB‡	30	n/a	34	n/a	29	n/a	29	n/a	27	n/a	26	n/a
GB†	15	94.9%	13	89.9%	12	86.0%	13	83.5%	13	81.2%	18	79.4%
ES*	n/a	90.6%	n/a	86.0%	n/a	83.5%	n/a	87.1%	n/a	82.7%	n/a	81.6%
Data on the number of speeding tickets not available nationwide												
AT	n/a											
BG	n/a											
CZ	n/a											
DE	n/a											
CH	n/a											
NO	n/a											

The proportion of offences detected by a safety camera varies greatly in the EU but has been increasing since 2010.

Almost all speeding tickets are issued as a result of an offence detected by a camera in the Netherlands, 98% in Lithuania, 94% in France, 91% in Spain and Denmark and 90% in GB. In contrast, only around 1% of all speeding tickets are issued following detection by a camera in Romania, 17% in Poland and 29% in Cyprus. These countries rely primarily on roadside police checks to combat speeding.

The Netherlands: highest level of speeding tickets per capita despite cuts to safety camera numbers

6.6 million speeding tickets were issued in the Netherlands in 2015 (393 per thousand inhabitants), by far the highest level in the EU. The number of speeding tickets has decreased by 22% since 2010, as the 1300 fixed analogue cameras were gradually replaced by 600 digital ones. 700 fixed cameras have been gradually removed where speed compliance had been high or where road infrastructure had been improved. Each digital camera can detect up to 30% more offences, but this has not fully compensated for the decrease in the overall number of cameras.

"There are some 600 fixed, 100 mobile and 10 time-over-distance cameras in operation in the Netherlands. These, together with our 'Mulder Law', facilitate the detection of a large number of speed offences. Introduced more than 25 years ago, the law enables authorities to require the owner of the vehicle to pay the fine, regardless of who was driving, for some traffic offences e.g. exceeding the speed limit by up to 30 km/h in urban areas and up to 40 km/h in rural areas.

Since 2010, the share of tickets issued following detection by a camera increased even further. Only 0.4% of speeding tickets are now issued on the spot by police officers. This is a cause of concern as it reflects a shift of priority: the police has been emphasising crime prevention in traffic rather than enforcement of traffic rules."[32]
Henk Stipdonk, the Institute for Road Safety Research (SWOV), the Netherlands

Estonia: safety cameras contributed to solid progress in road safety with a 14% reduction in road deaths between 2014 and 2015

Between 2010 and 2015, the number of speeding tickets has grown by 57% in Estonia from 58 to 102 speeding tickets per thousand inhabitants.

"Over the last six years the number of roadside police speed checks remained stable, but the number of tickets has increased following an extension of the safety camera network. Our camera system is still young: the first one was installed in 2010. We are proud to have 67 safety cameras now. Our plan is to gradually extend the network each year until 2019."
Erik Ernits, Road Administration, Estonia

Spain[33]: more cameras, an increase in infractions followed up

The number of speed tickets was relatively stable between 2010 and 2013, then increased in 2014 and in particular in 2015, following the extension of the safety camera network. 104 new safety cameras have been deployed between 2010 and 2015: 59 mobile, 29 fixed and 16 time-over-distance systems. As a result, 91% of all speed offences were detected automatically in 2015. The number of speeding offences followed up improved: 76% of speeding offenders, detected automatically and by the police, received a ticket in Spain in 2015, compared to 64% in 2009.

[32] vtsPN (2009) Strategic Memorandum Police Traffic Task (in Dutch only). Quoted in SWOV (2010). Traffic law enforcement in development (summary in English). Verkeer in ontwikkeling. Strategische Nota Politieverkeerstaak 2010-2012.
[33] Data include non-urban roads only; the Basque country and Catalonia are not included.

Great Britain: Driver training courses offered instead of fines for some offenders

The number of speeding offences recorded has declined since a peak in 2006. Monitoring shows improved levels of compliance over this period[34] but does not explain all the decrease in the number of speeding offences. 2007 saw the introduction of a Road Safety Grant given directly to local authorities. When the Road Safety Grant was abolished in 2010, some local authorities reduced or ceased camera enforcement, as they could no longer afford to run them during the recession.

At the same time, the National Driver Offender Retraining Scheme (NDORS) was introduced within the UK. When a motorist or rider has been caught committing a 'low level' offence (e.g. exceeding the speed limit by a few miles per hour over the speed limit), they receive a notice of intended prosecution. People who fit the NDORS criteria, are offered the opportunity to attend (and pay for) a NDORS course, instead of paying a fine and receiving penalty points. When a person has completed a course, their details are kept on a national database. This ensures that if a person is caught committing the same type of offence within a three year period from the date of the original offence, they cannot be offered another course and will therefore be prosecuted. Since 2010, the numbers of people taking the courses has increased from 448,000 a year to 1.207 million in 2015.[35]

The number of roads policing officers has also been reduced by 23% in England and Wales from 2010 to 2014. There are now 1279 fewer officers patrolling the roads than in 2010.

"The number of police officers dedicated to enforcing and monitoring offences in England and Wales has fallen by alarming levels. According to research conducted by the RAC, around 60% of motorists in England and Wales now think there are insufficient numbers of police officers on the roads to enforce driving laws. As a result there is little chance of law-breakers being detected and sanctioned for anything other than speeding or running a red light: offences typically enforced via cameras."
Peter William, RAC Motoring Services, the UK

1.3 Automated enforcement

Fig.2 reveals that the mix of fixed and mobile cameras, time-over-distance systems and dummy camera boxes varies greatly across the EU.

Fixed cameras are typically placed at fixed locations and can continually monitor traffic speeds without a human operator if digitally connected to an electronic system. Time-over-distance systems determine whether a violation has occurred by measuring the average speed over a road section.[36] This type of deployment may be used most often where speeding and speed-related collisions are a problem over some distance and may be perceived as fairer because speeds are not determined at a single point. Mobile camera systems might be deployed in marked or unmarked vehicles[37]. Some countries will move cameras between boxes or switch off cameras at times but drivers may be unaware which ones are operational.

83% of safety camera sites in Finland, 69% in Belgium and 67% of the cameras managed by the national police in Austria are dummy boxes. Fixed cameras are the most common automated speed enforcement equipment in Sweden, accounting for

[34] PACTS (2015) Amos L.; Davies D. Road Safety since 2010, http://goo.gl/pJhlXa
[35] https://ndors.org.uk/research/library. In a 2011 evaluation of the national speed awareness course commissioned by the Association of Chief Police Officers for England, Wales and Northern Ireland and the Association of driver improvement courses providers, participants to courses from September to December 2010 reported that they had changed their driving after attending the course, notably driving more slowly. The Department for Transport has commissioned another evaluation of the NDORS National Speed Awareness Course (NSAC) scheme to be complete probably beginning 2017.
[36] SafetyNet (2009), Speed enforcement, http://goo.gl/ywW6mC
[37] Police enforcement can be made visible (in marked vehicles which might display a safety camera symbol for example) or invisible (with unmarked vehicles looking like any regular car).

99% of all safety cameras, Norway (93%), Lithuania (92%), the Netherlands (80%) and France (73%). Only mobile cameras are used in Denmark and Ireland. They are also widely used in Romania, where 98% of safety cameras are mobile, in Slovenia (88%), in Croatia (84%) and in Poland (82%).

Among the countries that could provide data, Sweden has the highest number of safety cameras per population, with 135 cameras per million inhabitants, followed by Ireland (107), Slovenia (101), Switzerland (93) and Croatia (80). In contrast, there are only 2 cameras per million inhabitants in Cyprus and 10 in Latvia. Almost half of the EU countries could not provide data on the total number of safety cameras, mainly because the competence of installing a camera is shared between the state and local authorities. Local authorities do not always report to the state level the number of cameras on their roads.

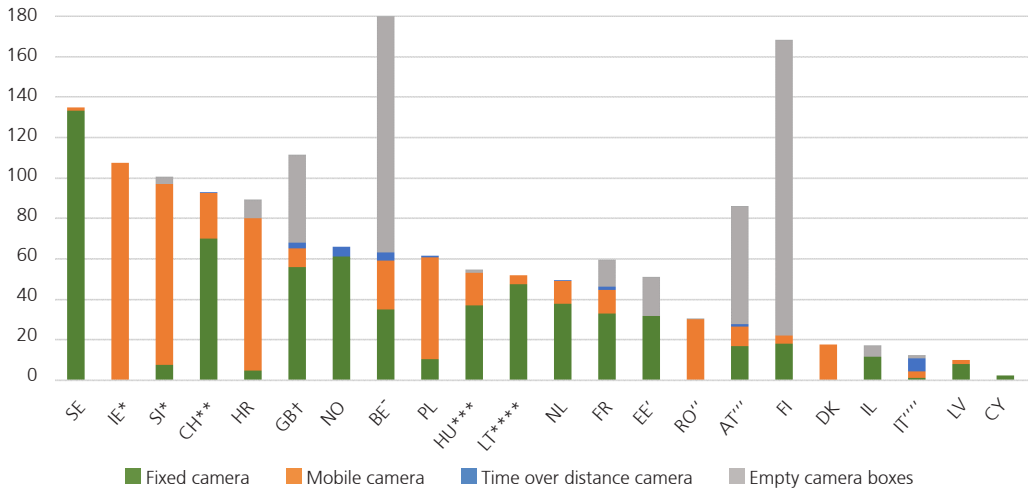


Fig.2: Number of safety cameras per million inhabitants in 2015, ranked by the number of fixed, mobile and time-over-distance cameras taken together.
*Laser guns in mobile camera category included. **Fixed camera category includes empty boxes. †Estimates based on past surveys and expert knowledge, the number of safety cameras and population data for England and Wales only. - Data included in the figure should be considered as a minimum, as the numbers since 2014 have increased. ***365 fixed cameras in 134 locations. ****National roads only. '42 measuring systems rotate between 67 boxes. ''Safety cameras operated by national police. '''Cameras operated by federal police only. ''''Cameras operated by National Police and Carabinieri only, local Police operating in cities is not included. CH: latest year available 2014.

Safety camera density (cameras per million inhabitants) is only one indicator of the level of speed enforcement and has some limitations. The use of cameras to enforce speed limits is difficult to compare across countries because there is no standard specification for them or the trigger speed above the seed limit at which they will operate. Some countries (e.g. Sweden) have a high density of cameras but the times of operation are low. Other countries may have fewer cameras but operate them for longer periods. The number of tickets issued per camera varies due to the factors described above but also the effectiveness of related publicity and education campaigns and the efficiency of the ticket issuing offices differ between countries.

Romania: expansion of safety camera network held back by lack of resources

Compliance with speed limits is low in Romania. Yet only four in a thousand inhabitants received a ticket for speeding (Table 1). The number of offences detected automatically has fallen from a peak in 2011 with 32679 to only 4552 in 2014 (last year available), and the number of tickets issued manually from more than one million in 2011 to 771,000 in 2014.

"Unfortunately, fines from speeding offences go to the general budget of local administrations. As a result, the traffic police do not have the resources to maintain/ expand the safety camera network nor uphold high levels of road-side checks. We are calling on local administrations to re-invest the revenues of traffic offence fines into enforcement. Otherwise, our only chance relies on whether we can benefit from EU funds to modernise and extend our fixed camera network, as Poland did."
Bracea Florentin, Police Chief Commissioner, Romania

Germany: disparities in the number of safety cameras between states

Like in other federal countries, the responsibility for speed enforcement is shared in Germany between the state and local authorities. For this reason, data on the number of speeding tickets are not available nationwide. It is estimated that around 4400 fixed cameras are installed across Germany, but with big discrepancies between states: around 1150 fixed cameras are operating in Baden-Württemberg, compared to only 89 in neighbouring Bavaria. In recent years the number of safety camera has increased, especially in urban areas.

Ireland: 24 lives and 41 serious injuries saved each year thanks to safety cameras

In 2010, the Irish police launched a mobile safety camera scheme and identified a large number of road sections with a history of collisions where speed was a contributing factor. Currently 1031 sections of road are identified as speed enforcement zones with safety cameras housed in marked vans[38]. A 2014 study by the Department of Economics at Trinity College Dublin, carried out for the Irish Department of Transport, revealed that the benefits of safety camera outweighed the costs by more than five to one, generating a benefit to Irish society of over 70 million Euro each year, with almost 92% being delivered in the form of reduced collision levels.[39]

The costs of running safety cameras in Ireland are more than double the fine income they generate.

Contrary to popular belief, Irish safety cameras are not a 'cash cow' for the state. The operational costs of running safety cameras in Ireland (16 million Euro a year) are more than double the fine income they generate (6.9 million Euro a year). Comparing "before" (2005-2010) and "after" (2011-2013) periods, it was estimated that the mobile camera scheme has prevented on average 24 deaths, 41 serious injuries and 319 slight injuries each year. The research factored in the effects of reduced traffic volumes caused by the recent Irish recession and of national trends in accident reduction following greater efforts in enforcement, road engineering and safety education. There is also strong evidence of public support: 85% of drivers support the use of safety cameras, while 66% believe they have an effect on safety.[40] 75% of motorists consider that it is 'likely' they would encounter a safety camera on a long distance journey.

"We had to be creative because of the relatively low traffic density in Ireland. So we decided to go for mobile cameras housed in vans instead of fixed cameras. The vans are driven by a private company but the tickets are processed by the police. The contractor operating the cameras has to provide at least 6000 hours of speed enforcement each month. The payment is based on the number of hours, not on the number of detected violations. Our cameras save lives in a cost-effective way."
Superintendent Con O'Donohue, Garda National Traffic Bureau.

Yet speeding is still a major issue in Ireland. A new report from the Road Safety Authority (RSA) has revealed that between 2008 and 2012, 322 people died in collisions where excessive speed was a contributory factor.[41] A nationwide observational speed survey on Irish roads conducted in 2015 for the RSA found that driver compliance with speed limits is still poor. On average, 60% of car drivers and 47% of truck drivers exceeded the posted speed limit in urban areas. On rural roads, 22% of car drivers and 34% of truck drivers exceeded the posted speed limit, 28% and 59% of them respectively on 100km/h dual carriageways.[42]

[38] The high risk sites where speed enforcement is taking place are made public on the police website http://www.garda.ie/Controller.aspx?Page=5590. The cameras operate from vans that display a safety camera symbol. GoSafe, the service provider, provide a minimum of 6,000 enforcement hours per month across the country. The vans collect and forward data on offenders to the Garda's Office for Safety Camera Management. A survey is also conducted from unmarked vans pre and post enforcement, in order to record the speeds and ensure that these sections of roads continue to represent locations where speeding is a problem.
[39] Rafferty, D. (2014), Life savers, not revenue raisers – Safety Cameras in Ireland: A Cost Benefit Analysis, University of Dublin Trinity College http://goo.gl/Mc7C5k. The study calculates the financial benefit of the 23 lives saved per year using the Irish Department of Transport's 2013 value of a life of 2.67 million euro.
[40] Behaviour & Attitudes (2014), drivers survey, http://goo.gl/n5JkVo
[41] Road Safety Authority (2015), Fatal Collisions 2008-2012, Excessive speed as a factor, http://goo.gl/aZlgSX
[42] Road Safety Authority (2013), Free Speed Survey (Urban and Rural), http://goo.gl/6vKoyL

1.4 Follow-up of sanctions

As many as 70% of speeding offenders detected by safety camera do not receive a speeding ticket in Poland and Sweden and 29% of all speeding offenders in France. It is highly possible that other EU countries are facing similar challenges to follow up and sanction automatically-detected violations, but the majority of EU countries are either not collecting the data or not making them public.

There are many reasons that can explain why some automatically-detected offences remain unsanctioned:

- driver liability as a legal basis for traffic rule enforcement requires the driver to be identified which might be difficult or impossible;
- not enough human resources to follow up with the fines for a high volume of offenders;
- error in the vehicle registration database;
- camera software specifications not set to recognise number plates from all other EU countries;
- technical failure of the cameras to recognise or record the number plate;
- more than one vehicle on the picture.

Moreover, some road users might avoid penalties. Powered two wheeler riders are not required to have a licence plate in front and, therefore, remain unidentified by safety cameras that photograph from the front. Motorcycle riders can also avoid sanctions in countries applying driver liability as the rider's face is covered by the helmet. Foreign offenders, being from the EU or not, might remain unsanctioned, if cross border enforcement is not considered a priority (see section 5).

The 5 million speeding penalties issued automatically in France in 2005 would have required 6500 additional police officers under the old system.

France: around 71% of speeding violations sanctioned

France has 60 safety cameras per million inhabitants; 500 more new safety cameras will be installed during the next three years, bringing the overall total to 4700 devices, compared to 4200 in 2016. 10000 new empty boxes will also be installed to increase the subjective risk of being caught as drivers may be unaware which ones are operational.

The number of speed tickets per population is one of the highest in Europe, with 205 speeding tickets per thousand inhabitants. 94% of all speeding tickets are issued as a result of detection by a safety camera. 71% of all speeding offences detections lead to a sanction.[43] The safety cameras are directly linked to a central processing office where photographs of the licence plate are used to identify the vehicle owner who is liable for the violation. The fine is sent automatically less than 8 days following the detection of the offence to the owner of the vehicle who must pay it within 45 days.[44] The law was adapted to enable this form of automatic detection of offenders. It is only possible to designate another driver as the offender after paying the fine. This practice has reduced the appeal rate to below 1%. The 5 million speeding penalties issued automatically in France in 2005 would have required 6500 additional police officers under the old system.[45]

[43] Carnis L. et al. (2013), An assessment of the safety effects of the French speed camera program. In Accident Analysis and Prevention 51. https://goo.gl/IsOrWb

[44] In most cases, demerit points are also added to the driving licence. A report by the administration inspectorate revealed that in 46% of the offences, no point had been withdrawn from the driving licence, although it should have been the case. http://goo.gl/WKCfIH. The government is working on addressing the issue.

[45] European Commission (2008), Commission Staff Working accompanying the Proposal for a Directive of the European Parliament and of the Council facilitating cross-border enforcement in the field of road safety, Full impact assessment, http://goo.gl/gLo6il

Research has shown extensively that safety cameras are a cost-effective way of enforcing traffic laws.[46] An evaluation study estimated that around 15,190 road deaths and 32,260 injuries were prevented between 2003 and 2010 in France following the deployment of safety cameras and the introduction of a fully automated speed enforcement scheme.[47] In a 2004 survey, drivers declared that they drove more slowly, and that the main reason for that was fear of enforcement and of losing points on their driving licence[48]. The location of fixed and mobile cameras is decided by the police forces on the basis of traffic and collision information. Wide publicity campaigns have taken place on the deployment and location of cameras and on the safety effects of speed reduction. The sites of fixed cameras are displayed on the internet. The annual revenues from speeding fines generated by the safety cameras (around 700 million Euro in 2013) are used to finance and maintain the safety camera system (239 million Euro); or to other road safety activities and infrastructure projects and to finance the reduction of the debt (around 60 million Euro).[49] The costs of road collisions in 2013 are estimated in France to be as high as 21 billion Euro.

Poland: driver liability explains low number of offences actually followed-up

There are 62 safety cameras per million inhabitants in Poland and around 17% of all speed offences are recorded by safety cameras. Only 30% of all automatically recorded speed offenders received a ticket in 2015.[50] Even though the situation has improved slightly since 2011, when 27% of automatically-detected speeding offences were sanctioned, further efforts are needed to improve follow-up procedures in Poland. The first form for an automatically-detected offence is sent to the car owner approximately two weeks after the observed offence.

"The main problem influencing the effectiveness of executing traffic law violations comes from user liability. The procedure of identifying the driver who committed the offence can be long, requires a lot of work and depends on the information provided by the car owner. It is estimated that one person is needed to follow up the offences detected by one camera. Today 450 devices are managed by the General Inspectorate of Road Transport and only 220 people have been allocated to process the fines."
Ilona Buttler, Motor Transport Institute (ITS), Poland

Sweden: objective of 80% of traffic to comply with speed limits by 2020

With 159 safety camera per million inhabitants, Sweden has one of the most extensive networks in the EU and is planning to increase it. Until 2018, 700 new cameras will be added to the existing 1300 fixed and 15 mobile ones, to reach approximately 230 cameras per million inhabitants. It is estimated that only 46% of the traffic on State-owned roads in 2015 is complying with the speed limits. In order to achieve the national target of no more than 220 road deaths by 2020, progress in relation to 13 indicators is monitored and presented to stakeholders annually. One of the 13 objectives monitored is to reach 80% of the traffic volume complying with speed limits by 2020. The extension of the safety camera network is aiming at increasing compliance.

[46] Thomas et al (2008), Safety effects of automated speed enforcement programs. Critical review of international literature; Erke et al. (2009), Good practice in the selected key areas; Wilson et al. (2010), Speed cameras for the prevention of road traffic injuries and deaths (Review), Høye A. (2014), Speed cameras, section control, and kangaroo jumps- a meta-analysis.
[47] Carnis L. et al. (2013)
[48] Arrouet, J.-P. (2004), Conducteurs Français, vous avez changé. In Circuler autrement 121, May-June 2004.
[49] Sécurité routière, Frequently Asked Questions - Speed cameras (in French), http://goo.gl/M3IJVt
[50] Data from General Inspectorate of Road Transport, http://goo.gl/CgN6uw

Yet, the number of speeding tickets per thousand inhabitants is one of the lowest in Europe (Table 1), as only 30% of the offences detected by camera are followed-up with a ticket. The strict driver liability in place in Sweden requires the identification of the driver as a precondition for issuing a fine.[51] To limit the number of cases to a level that the enforcing authorities can handle, safety cameras only record speed offences for two and a half hours per day on average, but drivers passing by a camera do not know whether it is on or off. According to the SARTRE survey, 77% of Swedish drivers think that they are not likely to be checked for speeding on a typical journey.[52] Mobile police checks, where the driver is stopped, are therefore a crucial complement to safety camera to increase the subjective risk of being checked. 52% of all speeding tickets in Sweden follow a mobile police check, where the driver is stopped, one of the highest proportion among the countries that could provide data (Table 1).

"Since identifying the driver is difficult and resource-consuming, we have to sustain a high number of mobile police checks. Not only to deter speeding but also to prevent other violations. There are causes of concern as we see that less time was available for the police to enforce traffic laws recently."
Johan Strandroth, Swedish Transport Administration

"Despite the low number of detected speed offences that result in a ticket, significant speed reductions are observed on the roads where safety cameras are installed. We are monitoring speed compliance at camera sites to ensure that our system continues to be efficient and actually cuts speeds on the most dangerous sections of road."
Anna Vadeby, Road and Transport Research Institute (VTI), Sweden

Germany: impunity for some speeding offenders in Saxony, due to long administrative procedures

Unfortunately, nationwide data for Germany are not available but data for the Federal State of Saxony show that only around 78% of the drivers who had broken the speed limit received a ticket in 2015. However, this was an improvement compared to 2010 when only 50% received a ticket. In some cases, the procedure took longer than the permitted legal delay for the prosecutor to process the fine. One explanation can be the difficulty of recognising the driver due to bad image quality of the safety camera picture.[53]

Finland: progressive fines linked to net income

Since the 1920s Finland has applied a 'day fine' system for traffic law offenders, which links fines to net income. In a widely-reported case in 2015, Reima Kuisla, a wealthy businessman, was fined EUR 54,024 for travelling at 103km/h in an 80km/h zone. The fine was calculated based on his 2013 tax return, which showed a EUR 6.5 million income for that year.[54]

Did you know?

While drivers are usually aware of the increased risk of being involved in a fatal collision after drinking, they largely underestimate the increased risk of being involved in a fatal collision when speeding. Driving with 0.5g/l BAC increases the risk of a fatal collision by a factor of 5; driving about 50% above the speed limit also increases risk by about the same factor. The increased risk of driving at 75km/h on a 50km/h road, 135km/h on a 90km/h road or 180km/h on a 120km/h motorway is therefore similar to the increased risk of driving with a 0.5g/l BAC.

[51] Sweden and Germany apply strict driver liability, i.e. the enforcement authorities cannot require the owner/holder of the vehicle to identify the driver because this would contradict the privilege against self-incrimination. The privilege against self-incrimination forbids a government from compelling any person to give testimonial evidence that would likely incriminate this person in subsequent criminal case.
[52] SARTRE 4
[53] Bundesverkehrsportal (2016), http://goo.gl/dRIQOC
[54] ETSC Speed Monitor (20), January 2016, http://goo.gl/gxWA1N

Recommendations to Member States

- Promote the introduction of owner or keeper liability as opposed to driver liability to facilitate enforcement of speed limits.
- Adopt national enforcement plans with yearly targets for number of checks and compliance levels, including on speeding, in line with the EC 2004 Recommendation on Traffic Law enforcement.
- Set up a transparent system for the allocation of revenues generated by fines and channel revenues from camera enforcement back into road safety work.
- Apply European best practice in the enforcement of speed limits, including experience in using safety cameras and time-over-distance systems.
- Countries with low numbers of safety cameras should extend the network.
- Install safety cameras able to detect speeding motorcycle riders and enforce their compliance with speed limits.
- Incorporate speeding offences in penalty point systems and make sure that the levels of penalty escalate as the level of speeding above the limit increases as well as for recidivists.
- Monitor development of speed patterns (mean speed and 85th percentile) and publish regular overviews of change for different kinds of road user.
- Improve the robustness of the systems to reduce appeals for fixed penalties for speeding violations.

Recommendations to EU Institutions

- Include best practice guidelines on speed enforcement and sanctions to encourage member states to achieve high standards on enforcement methods and practices and a greater convergence of road-safety-related traffic rules, building on the EC Recommendation on Enforcement in the field of Road Safety.[55]
- Adopt legislation for fitting all new cars with an overridable assisting Intelligent Speed Assistance system.
- Adopt legislation for fitting all new commercial vehicles with Intelligent Speed Assistance systems in line with the recommendations of the evaluation study conducted on behalf of the European Commission. The system should be overridable up to 100km/h for buses and 90km/h for lorries, in line with existing EU legislation on speed limiters.
- Initiate a technical assistance programme to support less well-performing member states to develop and pilot a national strategy on speed management. The approach might also include technical exchanges and twinning with other better-performing countries.

[55] EC Recommendation on Enforcement in the Field of Road Safety 2004/345, http://goo.gl/Vw0zhN

PART II
DRINK DRIVING

While drink driving is relatively infrequent compared to other traffic offences, it is highly dangerous. It is estimated that up to 2% of kilometres travelled in the EU are driven with an illegal Blood Alcohol Concentration but around 25% of all road deaths in the EU are alcohol related.[56]

The risk of a road death increases exponentially with the blood alcohol content (BAC) level of the driver. Drivers with BAC between 0.1g/l and 0.5g/l are 1 to 3 times more likely to be involved in a fatal collision than sober drivers. Drivers with BAC between 0.5 and 0.8g/l are 20 times more likely to be involved in a fatal collision; drivers with BAC between 0.8 and 1.2g/l 30 times.[57]

Research has identified proven measures that can keep alcohol impaired drivers off the road and save thousands of lives each year, including reduced legal BAC limits, drink driving enforcement, alcohol interlocks for certain categories of drivers and drink driving offenders, coupled with education and awareness-raising campaigns.[58]

However, drink driving remains one of the biggest road safety problems in the EU. According to the SARTRE survey, 31% of car drivers in Europe reported to have driven after consuming some amount of alcohol. The highest number of drivers who believe they can drink and drive if they are 'careful' are in Belgium (18%), Cyprus and Italy (both 17%), Israel and Serbia (both 13%), France (12%), Austria and the Netherlands (both 11%). The lowest number of drivers who believe they can drink and drive safely are in Greece (2%), Hungary and Sweden (both 3%), Finland and Ireland (4%) and Poland (5%).[59]

2.1 Dynamics in drink driving checks

Out of the 15 countries that could provide data over the period 2010-2015, the number of alcohol checks increased in eight countries and eight registered a decrease (Fig.3). The number of alcohol road-side checks grew by 39% each year in Poland, 24% in Estonia and 12% in Portugal. The number of alcohol checks dropped by 13% annually in Sweden, 10% in Cyprus and 5% in England and Wales.

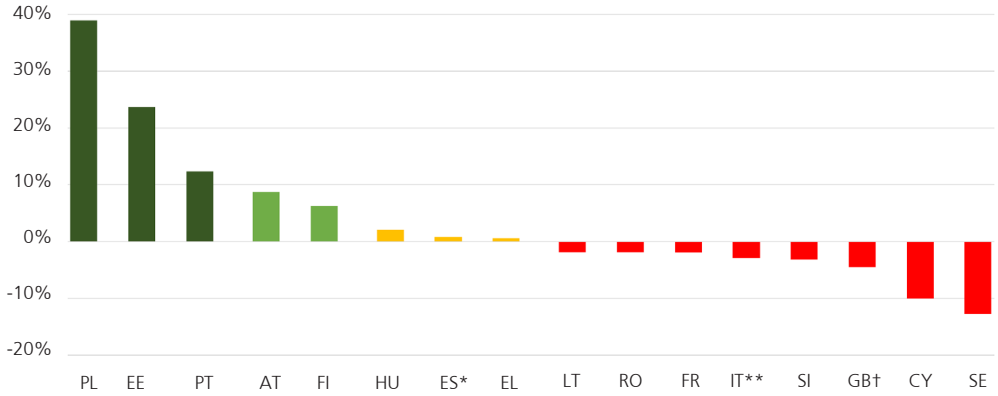


Fig.3 Annual change (in %) in the number of alcohol roadside breath checks over the period 2010-2015.
*Data from urban roads and from the Basque Country are not included. Data for Catalonia cover checks on all roads. **Alcohol road side breath tests by national police and Carabinieri only, the number of tests done by local police operating in cities is not included.†Number of checks and population data for England and Wales only over the period 2011-2014. EL, FR – 2010-2014 data, PT – 2010-2013 data, RO – 2013-2015, EE – 2012-2015.

[56] ECORYS, COWI (2014), Study on the Prevention of Drink-Driving by the use of Alcohol Interlock Devices, http://goo.gl/lBLGfM
[57] ECORYS (2014), Study on the prevention of drink-driving by the use of alcohol interlock devices, http://goo.gl/aJ4qgl
[58] ETSC (2012), Drink Driving: Towards Zero Tolerance, http://etsc.eu/drink-driving-towards-zero-tolerance/ and US Centers for Disease Control and Prevention, Policy Impact – Alcohol Impaired Driving, http://goo.gl/wNn7so among others.
[59] SARTRE 4, European Road Users' Risk Perception and Mobility, http://goo.gl/2hOX5Z

2.2 Drink driving enforcement levels by country

Targeted breath testing coupled with media campaigns around enforcement increases drivers' subjective perception of being caught and punished. Among the countries that could provide up-to-date data, police in Estonia, Poland and Finland are most active in the fight against drink driving with respectively 677, 466 and 279 driver checks per thousand inhabitants in 2015 (Table 2). The number of checks are also high in Austria (189) and Slovenia (156). The lowest probability of being checked for drink driving is in Lithuania and Romania with less than one hundred in a thousand inhabitants being checked for drink driving per year.[60]

Poland and Estonia registered the lowest proportion of drivers tested who were found to be above the legal drink driving limit. The proportion of such drivers are high in GB (11%), Cyprus (7%) and Slovenia (3.6%). However, these figures are difficult to interpret since the roadside checks are not comparable between the countries on aspects such as randomness and the place and time of the checks.[61] In most European countries, random (also so called "targeted") breath testing is allowed. In others, such as the UK and Germany, some kind of alcohol use suspicion is conditional for a police officer to test a driver.[62]

Table 2. Roadside alcohol breath tests per 1000 inhabitants and proportion of those tested found to be above the legal limit.
*Data on the number of checks on roads in urban areas and in the region of the Basque Country are not available. Data for Catalonia covers checks on all roads. **Drink driving tests by national police and Carabinieri only. Checks done by the local police operating in cities are not available. †Drink driving tests for England and Wales only, the figure for the number found to be above the legal limit includes those who refused to take the breath test.

	2015		2014		2013		2012		2011		2010	
	Roadside police tests per 1000 inhabitants	Proportion above the legal limit (in %)	Roadside police tests per 1000 inhabitants	Proportion above the legal limit (in %)	Roadside police tests per 1000 inhabitants	Proportion above the legal limit (in %)	Roadside police tests per 1000 inhabitants	Proportion above the legal limit (in %)	Roadside police tests per 1000 inhabitants	Proportion above the legal limit (in %)	Roadside police tests per 1000 inhabitants	Proportion above the legal limit (in %)
EE	677	0.9%	572	1.0%	470	1.3%	356	1.8%	n/a		105	0.7%
PL	466	0.7%	405	0.9%	234	1.8%	194	2.3%	149	3.2%	88	4.9%
FI	279	1.0%	286	0.9%	149	1.5%	175	1.3%	220	1.0%	206	1.0%
AT	189	1.6%	214	1.8%	209	2.0%	195	2.4%	169	2.8%	123	3.7%
SI	156	3.6%	186	3.6%	184	3.7%	161	3.9%	188	4.5%	200	4.7%
EL	n/a		166	1.6%	163	1.7%	156	1.8%	158	2.0%	164	2.1%
FR	152	2.9%	164	2.9%	160	3.1%	168	3.2%	172	3.5%	168	3.4%
HU	135	1.5%	124	1.9%	121	1.9%	125	2.1%	118	2.9%	120	3.6%
CY	135	7.0%	138	6.7%	146	7.2%	176	7.4%	205	4.9%	213	5.3%
SE	130	1.0%	205	0.6%	234	0.6%	256	0.6%	259	0.7%	287	0.6%
RO	72	1.8%	73	1.6%	75	1.0%	n/a		n/a		n/a	
LT	48	1.8%	52	1.9%	55	2.2%	53	2.1%	83	2.0%	42	2.7%
PT	n/a				149	n/a	133	n/a	111	n/a	107	3.8%
IL	n/a										122	1.0%
NO	n/a										367	0.2%
Countries where data are available for checks on part of the road network only												
ES*	n/a	1.7%	n/a	1.8%	n/a	1.8%	n/a	1.9%	n/a	2.0%	n/a	2.1%
IT**	25	2.5%	26	2.4%	29	2.6%	30	2.8%	31	3.1%	28	3.3%
GB†	n/a		11	11.0%	12	10.4%	12	11.1%	12	11.8%	13	11.5%

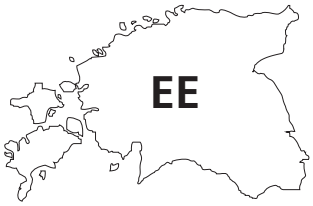
[60] Ideally the indicator would have been the number of drink driving checks per thousand driving licence holders, but the number of driving licence holders is not updated in many countries, making country comparisons difficult.
[61] Houwing, S; Stipdonk H. (SWOV, 2014), Driving under the influence of alcohol in the Netherlands by time of day and day of the week, http://goo.gl/31ubgV
[62] In the UK, a driver may be stopped on suspicion of some other offence and then breath tested. All drivers involved in a collision will normally be tested.

Portugal only collects the number of tests without gathering the number of drivers tested above the legal BAC limit. Ten countries do not collect data on the number of drink driving police checks: Belgium, Switzerland, The Czech Republic, Germany, Denmark, Croatia, Latvia, the Netherlands, Serbia and Slovakia.[63,64]

Drivers across the EU think that they are unlikely to be stopped for an alcohol breath test. 58% of respondents to the SARTRE survey declared that they have not been checked for drink driving in the past three years.[65] The number of respondents checked for drink driving at least once in the last three years was highest in Finland and Estonia (67%) and lowest in Italy and Germany (16%), countries where random breath testing is not allowed.[66]

Alcohol interlocks – an effective enforcement tool

Alcohol interlocks are an effective countermeasure in the fight against drink driving. In many EU countries the technology has found its way on a voluntary basis into vehicles which are used for the transport of goods or passengers. More and more countries in Europe are adopting legislation for the use of alcohol interlocks in rehabilitation programmes for first-time high-level offenders and for recidivists.[67] Alcohol interlock law for drink driving offenders and/or professional drivers has been introduced in Belgium, Denmark, Finland, France, the Netherlands, Poland and Sweden. A study conducted by the Road Traffic Agency in Finland found that 6% of the drivers who had benefited from a rehabilitation programme with alcohol interlock committed another drink driving offence compared to 30% among other drivers who had not been driving with an alcohol interlock.[68]



Estonia: strong public support for high levels of drink driving enforcement

Among countries that provided up-to-date data, the number of alcohol road side breath tests are the highest in Estonia. Checks grew by more than six times in the last six years from 105 in 2010 to 677 tests per 1000 inhabitants in 2015.

"Fighting drink driving is a priority for our traffic police. Opinion polls show that 92% of drivers think drink and drug driving is dangerous and 7% think it is rather dangerous. The longstanding support from our citizens and politicians for drink driving prevention and enforcement activities helped us in achieving such a high number of drink driving checks. We are aiming at sustaining the current level, while improving their effectiveness: identifying where and when the tests should be done to get best safety effects."
Erik Ernits, Road Administration, Estonia

Poland: number of drink driving tests multiplied by five in five years

The number of drink driving checks in Poland in 2015 amounted to nearly half the population, from 88 in 2010 to 466 checks per thousand inhabitants in 2015.

"For many years fighting drink driving has been high on the police agenda. But a severe collision caused by a drunk driver in 2014 where 6 people were killed was a turning point. Following this tragic event, the number of tests increased steadily from 8.9 million tests in 2013 to 17.8 million in 2015. Among other things, the increase in the number of alcohol tests was made possible by new alcohol screening devices which enable traffic police to rapidly distinguish between sober drivers and those who need to pass a second test to confirm their impairment. Drink driving is still a big problem in Poland and much more needs to be done to address it."
Ilona Buttler, Motor Transport Institute (ITS), Poland.

[63] No information was received from Bulgaria and Malta. Luxembourg could not provide data in the format required in this report.
[64] Some countries, such as Belgium and the Netherlands, monitor other indicators such as the number of fines for drink driving.
[65] SARTRE 4, European Road Users' Risk Perception and Mobility, http://goo.gl/2hOX5Z
[66] Ibid
[67] ETSC (2015), Alcohol interlocks in the EU, http://goo.gl/oLXRRv
[68] Vehmas A. et al. (2013), Effectiveness and impact of alcohol interlock-controlled driving rights, http://goo.gl/qdYqZ4

England and Wales: Lowest number of drink driving breath tests in the countries with the highest legal BAC limit

England and Wales, together with Malta, have the highest legal BAC in the EU: 0.8g/l.[69] Northern Ireland has approved legislative changes to bring about a 0.5g/l or lower limit and these are expected to be implemented by the end of 2016.[70] England and Wales also have the lowest number of drink driving tests among the 19 EU member states for which data are available. While the police can use intelligence to undertake alcohol breath testing at areas and times where they would be most effective, for instance at locations where it is reasonable to assume drinking may have taken place, they do not have the right to test a driver simply because they are driving at such a location.[71] The police can only require a driver to give a breath test if the officer has evidence that the driver has consumed alcohol, or the driver has committed a traffic offence or is involved in a collision.

Great Britain has combatted drink driving by 50 years of education and publicity campaigns backed by police enforcement and strong penalties – typically a 12-month driving ban, an unlimited fine and possible imprisonment. Offenders must also undertake a reassessment before their licence is returned. This combination of measures has helped to change attitudes towards drink driving such that 90% of people think that driving when over the legal limit is completely unacceptable.[72] Most importantly, it has also reduced drink-driving deaths substantially. In 2014, 14% (240) of all road deaths in Great Britain involved a driver or rider with a BAC level above the 0.8g/l. This increases to 15% (265) based on a 0.5g/l limit. The WHO (2015) reports higher figures for Netherlands and Sweden.[73] The UK Government introduced significant new laws and equipment in 2015 to combat drug driving in England and Wales.

It has been calculated that reducing the limit in England and Wales would avoid about 25 deaths and 95 serious injuries every year.[74]

"The UK has done well to reduce drink drive deaths over many years. But progress appears to have stalled since 2010. The reduction in roadside breath tests by police across the UK is worrying. Lowering the drink-drive limit would be entirely compatible with past measures and provide consistency for drivers across the UK and Europe."
David Davies, Parliamentary Advisory Council for Transport Safety (PACTS), the UK.

Scotland: from 0.8 to 0.5g/l

In December 2014, new legislation came into force in Scotland reducing the drink drive limit from 0.8g/l to 0.5g/l. Estimates for drink driving related deaths are not yet available for the period following the reduction in the limit. Twenty people died in collisions involving drink driving in 2013, the latest year available. Police Scotland estimate that they stop around 20,000 drivers each month, on average, for drink driving tests. The Scottish government plans to give more powers to the police to carry out breath testing anytime, anywhere.[75]

2.3 Drink driving deaths

Fig.4 shows country performance since 2010 in reducing road deaths attributed to drink driving compared with progress in reducing other road deaths, using each country's own method of identifying alcohol-related deaths (see indicator box). In the majority of countries, progress in reducing drink driving has contributed more than its share to overall reductions in deaths.

[69] ETSC, Blood Alcohol Content (BAC) Drink Driving Limits Across Europe, http://goo.gl/oYPJ2S
[70] ETSC (2016), Case Study: Scotland's New Drink Driving Laws, http://goo.gl/lSHzVo
[71] ROSPA (2015), Road Safety Information, Drinking and Driving, http://goo.gl/aSjYaJ
[72] UK Government, DfT (2006), THINK! Road Safety Biennial Survey 2006-2015, https://goo.gl/uoE8VX
[73] TRL study for PACTS (2016, currently unpublished). The World Health Organisation. (2015). Global Status Report on Road Safety 2015. Retrieved March 2016, from The World Health Organisation, http://goo.gl/RF8trm
[74] Allsop R, (2015) Saving Lives by Lowering the Legal Drink-Drive Limit, http://goo.gl/P1cW3u
[75] ETSC (2016), Case Study: Scotland's New Drink Driving Laws, http://goo.gl/lSHzVo

In Cyprus, drink driving deaths were cut by 16% faster than other road deaths each year on average since 2010, in Croatia by 11% and in Israel and Latvia by 10%. In Slovakia, Serbia, Greece, Sweden, GB, Romania, Austria, Estonia, Poland and Lithuania developments in drink driving deaths have slowed down overall progress in reducing road deaths.

Research has shown that increased drink driving enforcement contributes to a decrease in drink driving deaths and injuries.[76] Increases in the number of checks in 2014 and 2015 in Poland (Table 2) are starting to pay off.

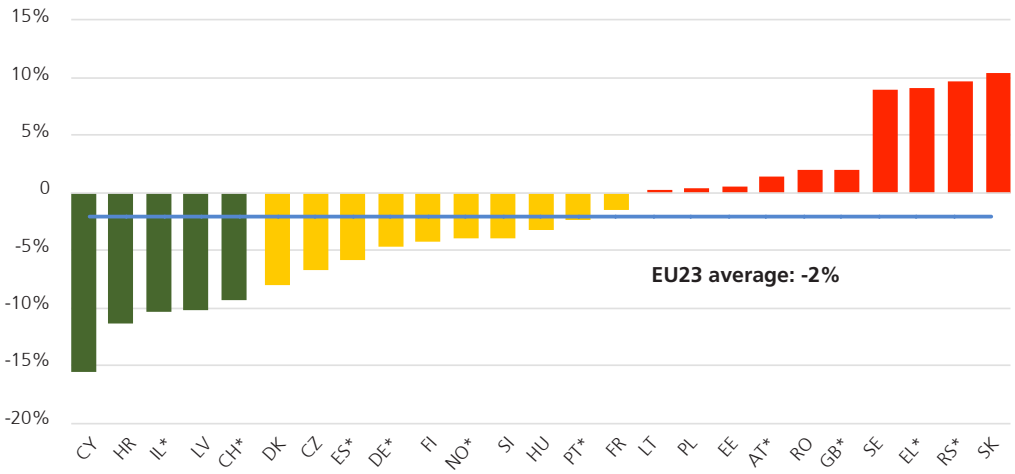


Fig.4: Difference between the average annual change (in %) in the number of road deaths attributed to alcohol and the corresponding reduction for other road deaths over the period 2010-2015. EU average is calculated for 23 EU countries that could provide the whole time series data up to 2014 or 2015. *2010-2014. LU is excluded from the figure as numbers of deaths attributed to alcohol are below 10, as well as BE due to high levels of underreporting, but their numbers are included in the EU average.

Drink driving deaths indicator

Levels of deaths attributed to drink driving cannot be compared between countries, as there are large differences in the way in which countries define and record them. Researchers in the European research project SafetyNet recommend using the definition: "any death occurring as a result of a road accident in which any active participant was found with a blood alcohol level above the legal limit". National definitions as provided by PIN panellists are available in the Annexes. While some EU countries have adopted the SafetyNet recommended definition, in practice, it seems to be mostly drivers or riders involved in collisions who are tested for alcohol. Moreover, in some countries, drivers are not tested for alcohol if they were killed on the spot and, in others, killed road users are not tested for alcohol unless a prosecutor requires it or the police suspect the collision to be due to drink driving. Deaths may only be classified as "drink driving deaths" if the driver or rider is above the legal limit and these also differ between countries.

Countries are therefore compared on the basis of developments in deaths attributed to drink driving relative to developments in other road deaths, using each country's own method of identifying alcohol-related deaths (Fig.4).

This ranking has been published previously in the ETSC (2015) 9th Road Safety PIN Report updating the rankings published in the ETSC (2012), Drink Driving: Towards Zero Tolerance report, and ETSC (2010) 4th Road Safety PIN Report, Chapter 3, which also mentions the issue of underreporting of drink-driving deaths.

The numbers of deaths attributed to drink driving were supplied by the PIN panellists when available (see Annexes). Estimates of the number of deaths attributed to drink driving are not available in Bulgaria, Ireland, Italy, Malta and the Netherlands. For Spain and Sweden the numbers of killed drivers who tested positive in post-mortem blood alcohol tests were used in their place.

[76] ESCAPE (2003), Traffic enforcement in Europe: effects, measures, needs and future, http://goo.gl/9ulgSG; Elvik R. (2000). Cost-Benefit Analysis of Police Enforcement, working paper 1, ESCAPE project.

Recommendations to Member States

- Allow for the testing of drink driving in all police roadside checks and introduce obligatory testing for alcohol in all fatal and serious collisions. Introduce roadside evidential breath testing procedures.
- Intensify enforcement of drink driving laws by setting targets for minimum levels of alcohol checks of the motorist population, e.g. 1 in 5 motorists should be checked each year. Couple enforcement with publicity activities.
- Mandate the use of alcohol interlocks for professional drivers.
- Consider adopting a zero tolerance level for drink driving (i.e. a maximum BAC of 0.2g/l).
- Collect the annual number of drink driving checks and those which were positive, and/or the number of deaths and serious injuries in drink driving collisions.
- Develop the use of alcohol interlocks in rehabilitation programmes for first-time high level offenders and recidivists.
- Organise regular nationwide campaigns to raise the public's understanding that drinking and driving is very dangerous.

Recommendations to EU Institutions

- Include best practice guidelines on drink driving enforcement and sanctions to encourage member states to achieve high standards on enforcement methods and practices and a greater convergence of road safety related road traffic rules, building on the EC Recommendation on Enforcement in the field of Road Safety[77].
- Mandate the CENELEC standards for alcohol interlocks in Europe which ensure that vehicle interfaces make it possible to fit an alcohol interlock.
- As a first step towards wider use of alcohol interlocks, legislate their use by professional drivers.
- Work on an EU-wide monitoring system to determine the prevalence of drink driving in the EU and the number of drink driving deaths and injuries. This should include testing for alcohol of at least all drivers involved in fatal collisions (if not all road users).

[77] EC Recommendation on Enforcement in the Field of Road Safety 2004/345, http://goo.gl/Vw0zhN .

PART III
SEAT BELT USE

The seat belt remains the single most effective safety feature in vehicles. Other important safety features such as airbags work as designed only if occupants are restrained by their seat belts.

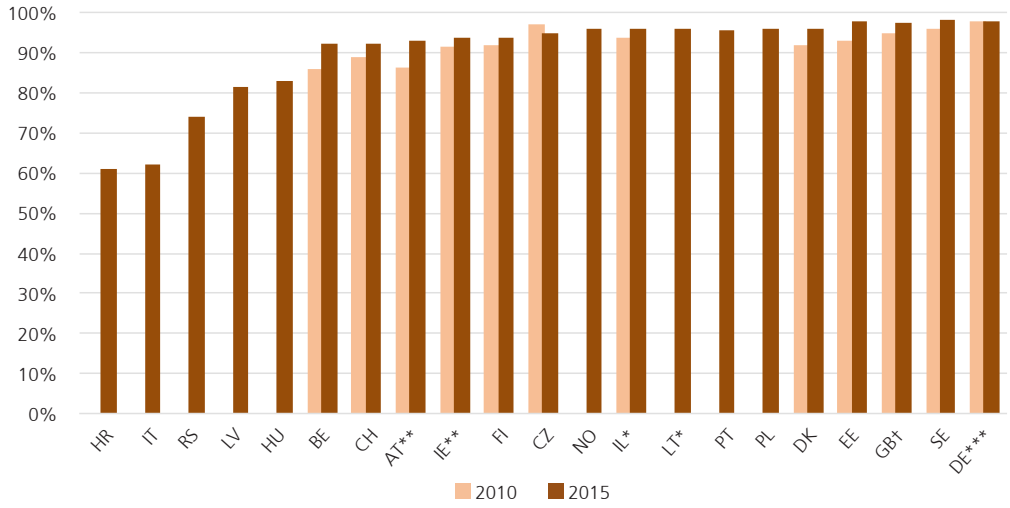
ETSC estimates that 8600 occupants of light vehicles in the EU survived serious collisions in 2012 alone because they wore a seat belt.[78] Progress has been made in both front-seat and rear-seat wearing in all countries monitoring seat belt use, due to awareness raising campaigns and seat belt reminders in new cars. Yet, although some progress has been made, Eastern and Southern European countries still underperform.

Despite the legal obligation to wear a seat belt across the EU28, seat belt use in cars in the EU is estimated to be only 90% for front seat (Fig.5) and 71% (Fig.6) for rear seat passengers in countries that are monitoring wearing rates. ETSC estimates that 900 deaths could have been prevented in 2012 if 99% of occupants had been wearing a seat belt, a rate that could be reached with seat belt reminders (SBR) on all car seats. The effectiveness of SBR in motivating seat belt use has been analysed in several on-road observational studies. The most extensive one showed that seat belt reminders fulfilling the Euro NCAP protocol are increasing seat belt use significantly.[79]

3.1 Seat belt wearing in front seats

Seat belt wearing rates are highest in Germany, Sweden, GB and Estonia with 98% passengers in the front seat belting up (Fig.5). Seat belt wearing rates in front seats remain as low as 61% in Croatia, 62% in Italy, 74% in Serbia, 82% in Latvia and 83% in Hungary.

Fig.5: Seat belt wearing rates in front passenger seats of cars and vans in 2015 and 2010 for comparison.
†England and Scotland only. 2010-2014. *2010-2014. **2009-2015. ***2009-2014.



[78] ETSC (2014), PIN Flash Report 27, Ranking EU Progress on Car Occupant Safety, http://goo.gl/tfiaxS
[79] Lie, A. et al. (2009), Intelligent seat belt reminders – do they change driver seat belt use in Europe? http://goo.gl/UBhvEO

INDICATOR

The usage rates used in this ranking present a simplified picture of a much more complex phenomenon. In reality, there is no clear-cut division between wearers and non-wearers of seat belts. Non-wearers may use the seat belt sometimes but not at all times, depending for example on what speed they are travelling at, what sort of road they are using, whether they are undertaking a longer journey, and whether there are other occupants wearing belts. The proportion of car occupants using seat belts (i.e. the wearing rate) is estimated through roadside counts. Observers are placed at selected locations on motorways, urban and rural roads, where traffic characteristics allow for this type of observation. Data for different road types are then aggregated based on shares of traffic per road type.

The EU-funded research project SafetyNet has developed stringent criteria for comparability of seat belt wearing rates across countries.[80]

For front seats this country ranking used combined driver and passenger wearing rates. Where only the driver rate was available, the front seat rate was considered to be identical to this rate (as recommended by SafetyNet).

Seat belt wearing rates were provided by PIN panellists and are available in the Annexes.

3.2 Seat belt wearing in rear seats

Disparities between countries are even bigger when it comes to wearing seat belts on rear seats: from 98% in Germany and the Czech Republic to only 1% in Croatia (Fig.6). Wearing the seat belt on rear seats is still exceptional in Serbia with 7% rear seat passengers belting up, in Italy (15%) and in Lithuania (33%). The biggest increase in the last five years in rear seat belt wearing rates were recorded in Austria, Estonia, the Czech Republic, Denmark and Sweden.

Fig.6. Seat belt wearing rates in rear seats of cars and vans in 2015 and 2010 for comparison.
†England and Scotland only. *2010-2014. **2011-2014.

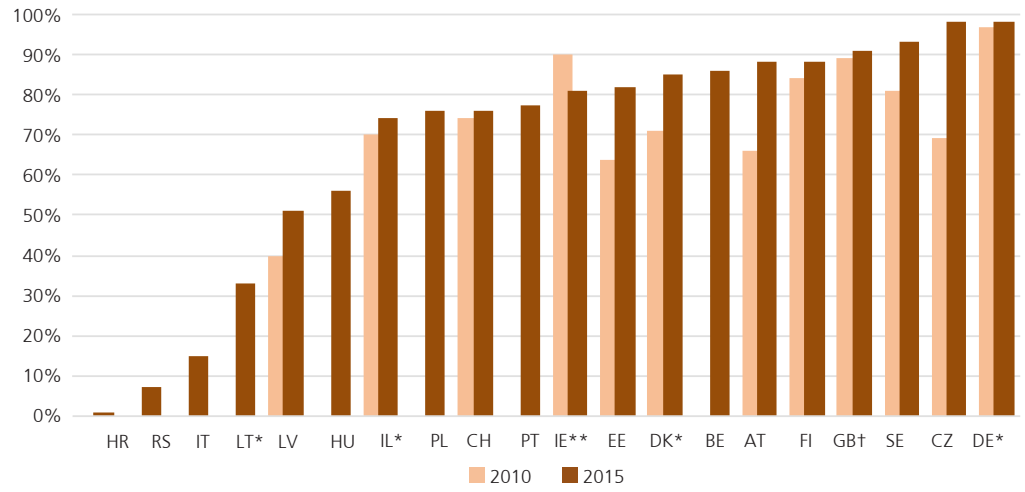


Fig.6 demonstrates that car occupants largely underestimate the consequences of not wearing seat belts in the back. Unbelted rear-seat passengers, who are thrown forward into the back of the front seats, significantly increase the risk of death for themselves and for belted front-seat occupants.[81] When collision speed increases, so does the force on the body when it hits the front seat or the front window.

Moreover, in the EU all children up to 150 cm in height must use a child restraint. Yet usage of appropriate child restraints differs greatly across Europe and the failure to use them properly is high leading to sub-optimal safety benefits.[82]

[80] SafetyNet D.3.8 (2007), Road Safety Performance Indicators Manual, http://goo.gl/y3mfap
[81] Wasted lives, Seatbelts, http://goo.gl/43M30M
[82] ETSC (2014), PIN Flash Report 27, Ranking EU Progress on Car Occupant Safety, http://goo.gl/tfiaxS

Croatia: only 1% of passengers buckle up in rear sets

„Our citizens need more information on the importance of belting up, especially in rear seats. The National Road Safety Programme 2011-2020 aims for 98% seat belt compliance, but we still have a long way to reach this objective. In order to achieve this goal we are going to increase seat belt enforcement. Together with the Ministry of Education we are also going to launch campaigns to improve awareness of the necessity to wear a seat belt."
Sanja Veić, Ministry of the Interior, Croatia

Fig.5 and 6 show that seat belt wearing rates increased since 2010 in all countries that collected the data, except Ireland and the Czech Republic. However, the proportion of killed vehicle occupants who are not wearing their seat belt is disproportionately high. ETSC's report on motorway safety revealed that up to 60% of those killed on motorway collisions are not wearing seat belts.[83]

3.3 Dynamics in seat belt enforcement levels

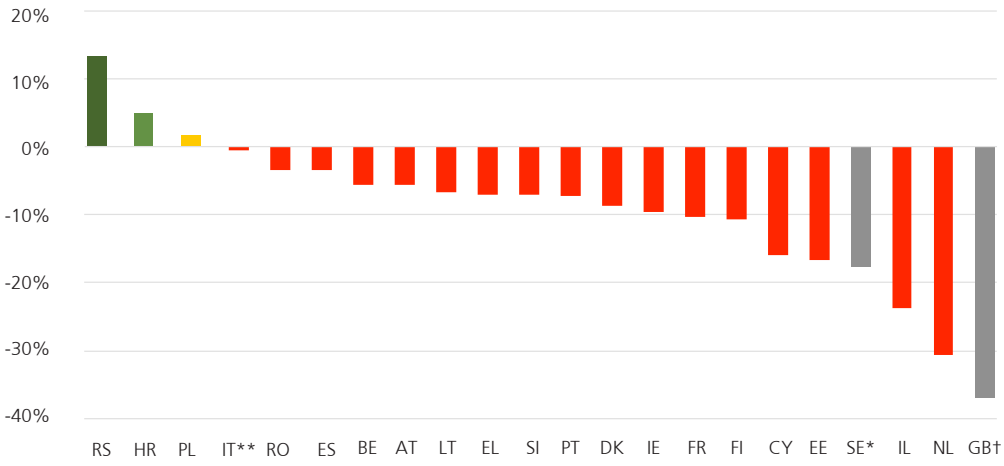
Seat belt enforcement is not a primary target for the police in many EU member states.

Despite of the fact that the proportion of killed vehicle occupants who were not wearing their seat belt is disproportionately high, seat belt enforcement is not a primary target for the police in many EU member states (Fig.7, Table 3). In some of them, it is still considered a minor violation that may not even be recorded or incorporated in demerit point systems.[84]

Fig.7 shows that seat belt checks went down significantly over the period 2010-2015 in almost all countries that are collecting data. The number of tickets for non-use of the seatbelt fell the most GB, the Netherlands, Israel, Sweden, Estonia and Cyprus. The number of tickets for failing to wear a seat belt increased by 13% on average each year in Serbia, by 5% in Croatia and 2% in Poland.

All countries can and should improve seat belt wearing, in particular Eastern, Central and Southern European countries. More lives will be lost unnecessarily unless seat belt checks are increased substantially. Countries should introduce mandatory checking of all car occupants each time a car is stopped and include failure to wear a seat belt in demerit point systems.

Fig.7 Annual change (in %) in the number of tickets for non-use of seat belt over the period 2010-2015.
†Number of tickets for England and Wales over the period 2011-2014. *Front seat passengers only. **Tickets following checks by national police, Carabinieri and police in main cities (provincial capitals). BE, ES, FR, EL, IT, PT, GB – 2010-2014 data. Countries in grey have seen a decrease in the number of tickets, but the reader should have in mind that wearing rates are above 95% for front and 90% for rear seats.



[83] ETSC (2015), PIN Flash Report 28, Ranking EU Progress on Motorway Safety, http://goo.gl/FycSbj
[84] ESCAPE (2003), Traffic Enforcement in Europe: Effects, Measures, Needs and Future, http://goo.gl/nAL9nQ

3.4 Seat belt enforcement levels by country

The number of tickets for failure to wear a seat belt is highest in Serbia and Romania with 25 and 24 tickets per 1000 inhabitants, followed by Croatia with 23 tickets per 1000 inhabitants and Slovenia with 20 tickets per 1000 inhabitants last year.

The European Traffic Police Network (TISPOL) organise coordinated seat belt enforcement operations with police officers all over Europe. The campaign is conducted twice a year and lasts for one week.

Table 3. Number of seat belt tickets per 1000 inhabitants.
†Data for England and Wales only, number of tickets for illegal use of a mobile phone. **Tickets following checks by national police, Carabinieri and police in main cities (provincial capitals). ***Front seat passengers only.

Seat belt tickets per 1000 inhabitants						
	2015	2014	2013	2012	2011	2010
RS	25.1	17.9	16.0	12.7	12.6	13.6
RO	23.5	24.4	29.4	22.9	28.0	29.1
HR	22.8	21.5	19.2	17.9	19.1	17.8
SI	19.6	23.8	22.4	22.1	25.8	31.3
CY	12.9	12.6	15.2	29.4	24.8	25.2
LV	n/a	13.5	14.9	n/a	17.2	16.8
AT	12.0	15.2	15.5	17.1	17.6	16.3
PL	10.7	11.4	10.1	9.8	9.8	10.4
IL	10.4	7.8	7.5	6.2	27.0	34.5
BE	n/a	9.1	8.9	7.8	10.3	11.4
LT	7.4	7.2	7.9	7.6	7.8	11.6
EE	4.8	6.1	7.5	10.7	8.0	13.8
DK	7.8	7.4	6.8	6.8	5.7	4.8
HU	3.9	7.0	6.8	n/a	0.4	0.0
FR	2.5	3.2	3.2	3.0	3.3	4.5
PT	n/a	3.2	3.1	3.9	4.2	4.1
EL	n/a	3.2	3.2	3.0	3.3	4.5
FI	3.0	3.0	3.4	4.0	5.1	4.7
SK	2.9	n/a			1.6	2.4
FR	n/a	2.9	3.5	4.0	4.1	4.3
ES	n/a	2.6	2.9	3.1	3.5	2.8
IE	2.3	2.5	2.6	3.0	3.4	3.8
CZ	1.9	n/a				
SE***	1.5	2.1	2.6	3.0	3.6	4.0
NL	1.2	3.7	4.3	3.9	6.5	11.3
LU	n/a				5.8	6.2
NO	n/a					6.2
Data available for tickets on part of the road network only						
IT**	3.1	2.9	3.0	3.7	2.9	3.1
GB†	0.5	0.6	1.3	1.8	2.5	3.2
Data on the number of seat belt tickets not available nationwide						
CH	n/a					
BG	n/a					
DE	n/a					
MT	n/a					

The Netherlands: the number of offenders stopped by police has decreased since 2007

Traffic law enforcement in the Netherlands intensified over the period 2000-2007 but the number of offenders being stopped for traffic offences has since decreased.

"Various factors may have contributed towards the decrease in traffic tickets, one of them being improved road user behaviour. Other factors include the abolishment of monthly traffic fine quotas. The police have also been emphasising crime prevention in traffic rather than enforcement of traffic rules. Traffic law fines were increased and, as a consequence, some drivers might have slowed down but also the police officers might have issued a warning only instead of a fine, considering them disproportionally high for the offence. Finally, the increase in underreporting of collisions over the period 2001-2010 might have led local authorities to give traffic enforcement less priority."
Henk Stipdonk, SWOV, the Netherlands.

Recommendations to Member States

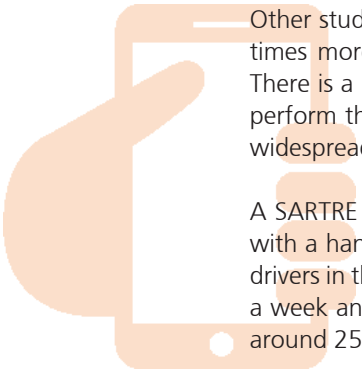
- Conduct intensive restraint systems enforcement, e.g. one week twice a year, coupled with intensive publicity campaigns.
- Increase enforcement of restraint systems in both front and rear seats. Each driver, as well as any passengers, stopped for whatever reason should be checked for seat belt wearing.
- Include seat belt wearing offences in penalty point systems.
- Collect yearly seat belt wearing rates for the various road and occupant categories (driver, front and rear passengers and child restraints).

Recommendations to EU Institutions

- Include best practice guidelines on non-use of seat belt enforcement and sanctions to encourage member states to achieve high standards on enforcement methods and practices and a greater convergence of road safety related road traffic rules, building on the EC Recommendation on Enforcement in the field of Road Safety[85].
- Extend the mandatory fitment of advanced seat belt reminders as standard equipment to all seats.
- Support the development of restraint systems that adapt to the needs of the user, their individual bio-mechanics and the severity of the specific collision.
- Introduce seat belt pre-tensioners and load limiters as standard.

[85] EC Recommendation on Enforcement in the Field of Road Safety 2004/345, http://goo.gl/Vw0zhN

PART IV
MOBILE PHONE USE WHILE DRIVING: HIGH RISK OF SEVERE COLLISION, LOW RISK OF BEING CAUGHT



Distracted driving is a growing problem in road safety. Data on how many collisions involve distraction is poor but experts estimate that it plays a role in 10-30% of them[86]. Other studies also suggest that drivers using a mobile phone are approximately four times more likely to be involved in a collision than a drivers not using a phone.[87] There is a long list of distractions that undermine the driver's or the rider's ability to perform the driving task, but the use of mobile phones while driving appears to be widespread and growing.

A SARTRE survey revealed that 33% of drivers reported making or answering a call with a handheld phone at least 'sometimes'.[88] Another survey showed that 40% of drivers in the Netherlands reported making hands free calls while driving at least once a week and 22% handheld phone calls.[89] Recent international surveys indicate that around 25-35% of drivers read text messages and 14-30% send text messages.[90]

Driving behaviour is affected more during a phone conversation than by having a blood alcohol level at the UK legal limit of 0.8g/l.

A simulator study carried out by TRL benchmarked the use of a mobile phone while driving against impairment from alcohol[91]. The overall conclusion was that driving behaviour is affected more during a phone conversation than by having a blood alcohol level at the UK legal limit of 0.8g/l.

Police enforcement, combined with publicity campaigns, has the potential to reduce illegal use of a mobile phone while driving.[92]

Distracted pedestrians and cyclists (listening to music, making phone calls, sending messages) are also a concern, especially as more people walk and cycle.

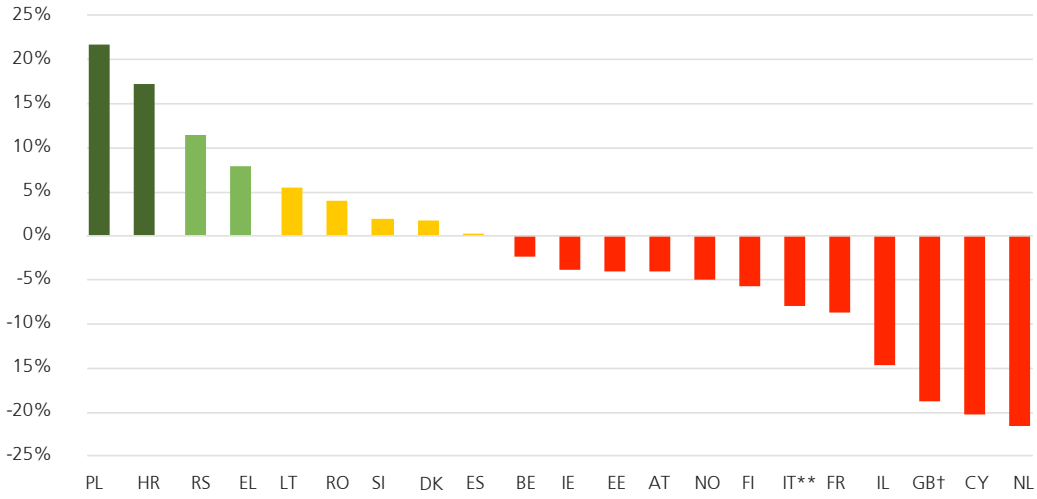
Even though the phenomenon of using a mobile phone while driving is widespread, enforcement levels remain low (Fig.8, Table 4).

[86] TRL, TNO and Rapp-Trans for the European Commission (2015), Study on good practices for reducing road safety risks caused by road user distractions, http://goo.gl/9asuLD
[87] WHO, Mobile phones use: a growing problem of driver distractions, http://goo.gl/qbe2j1
[88] SARTRE 4, European Road Users' Risk Perception and Mobility, http://goo.gl/2hOX5Z
[89] SWOV fact sheet, Use of the mobile phone while driving, https://goo.gl/yk4DLJ
[90] TRL, TNO and Rapp-Trans (2015), for the European Commission.
[91] Burns et al. (2002), How dangerous is driving with a mobile phone? Benchmarking the impairment to alcohol (TRL), http://goo.gl/MvJSvB
[92] Definition of illegal use of a mobile phone varies across the EU, for regulation in each country see the EC website Going Abroad: http://goo.gl/PhwJUO

4.1 Enforcement dynamics of illegal use of a mobile phone

Fig.8 shows that, out of 21 countries that provided data on the number of tickets for illegal use of mobile phone over the period 2010-2015, 8 countries saw an increase and 12 countries saw a decrease in the number of tickets and in one country the number remained unchanged. The number of tickets for illegal use of mobile phones increased by 22% each year on average in Poland over the period 2010-2015, by 17% in Croatia, 12% in Serbia and 8% in Greece. In contrast, ticket numbers have declined over the same period in the Netherlands by 22% on average each year and by 20% in Cyprus.

Fig.8 Annual change (in %) in the number of tickets for illegal use of mobile phone over the period 2010-2015. **Tickets following checks by national police, Carabinieri and police in main cities (provincial capitals). †Number of tickets for England and Wales over the period 2011-2014. BE, FR, EL, PT – 2010-2014 data. EE – 2011-2015 data.



4.2 Enforcement levels for illegal use of mobile phone by country

Although tickets for illegal use of mobile phones in Austria and Cyprus went down (Fig.8), they are still the highest among the countries who provided data, with around 13 and 12 tickets per thousand inhabitants respectively. Belgium and Slovenia follow with around 11 and 10 tickets for illegal use of mobile phone per thousand inhabitants. In contrast, only one person was fined for illegal use of a mobile phone per thousand inhabitants in Finland, GB, Italy and Estonia.

More work is needed to improve the systematic collection of mobile phone use in collision data to assess the extent and distribution of a growing problem of driver distraction in countries. This will allow prevention efforts to be effectively targeted.[93]

ETSC is calling for carmakers to publish test results that show their in-vehicle information and infotainment systems comply with the EU's statement of principles on human-machine interface design.[94] The guidelines state that systems "should be designed to support the driver and should not give rise to potentially hazardous behaviour."[95]

[93] WHO, Mobile phones use: a growing problem of driver distractions, http://goo.gl/qbe2j1
[94] ETSC Position Paper (2015), Revision of the General Safety Regulation 2009/661, https://goo.gl/qxcwup
[95] Task force HMI on behalf of the European Commission, European Statement of Principles on Human Machine Interface, http://goo.gl/rZTUsW

Table 4. Number of tickets for illegal mobile phone use per 1000 inhabitants.

†Data for England and Wales only, 2015 data include the number of tickets and sanctions imposed as an alternative to a ticket. **Tickets following checks by national police, Carabinieri and police in main cities (provincial capitals).

Tickets for illegal use of a mobile phone per 1000 inhabitants						
	2015	2014	2013	2012	2011	2010
AT	12.7	15.4	16.3	17.7	17.8	15.4
CY	12.0	11.3	14.1	29.3	30.6	27.8
SI	9.6	11.0	9.4	9.5	8.9	9.6
BE	n/a	10.8	10.6	10.8	12.1	11.5
HR	9.2	9.5	7.5	5.7	5.2	4.6
DK	7.3	7.9	8.6	7.8	7.5	6.8
IL	7.3	7.0	8.8	12.6	13.3	13.9
LT	7.1	7.0	8.0	9.3	6.5	4.9
IE	6.2	6.6	6.3	6.7	7.3	7.6
FR	5.2	5.7	6.7	7.5	7.8	7.8
RS	4.8	4.3	3.5	3.0	2.9	2.9
ES	n/a	4.3	4.3	4.1	4.4	4.2
RO	3.6	3.9	4.2	3.3	3.4	3.2
SK	3.6	n/a				
NO	3.4	3.4	3.6	4.0	4.1	4.3
PL	3.1	3.2	2.4	1.9	1.5	1.3
HU	2.6	4.4	3.9	0.0	0.0	0.0
NL	2.0	4.0	4.1	3.8	6.0	8.5
EL	n/a	2.1	2.2	1.7	1.7	1.7
FI	1.4	1.1	1.2	1.5	1.6	1.5
EE	1.1	0.6	1.0	1.8	0.8	n/a
Data available for tickets on part of the road network only						
IT**	2.4	2.3	2.6	3.2	3.6	3.3
GB†	1.4	0.5	0.9	1.6	2.2	2.2
Data on the number of tickets for illegal use of mobile phone not available						
BG	n/a					
CH	n/a					
CZ	n/a					
DE	n/a					
LU	n/a					
LV	n/a					
MT	n/a					
PT	n/a					
SE	n/a					

England and Wales considering stricter sanctions for illegal mobile phone use

The Government is considering increasing penalty points and fixed penalty notice levels for using a hand-held mobile phone whilst driving. The number of tickets for illegal phone use fell by 29% in England and Wales in the last five years following cuts in the number of traffic police and a switch to use of educational courses for offenders. An observation study has estimated that 1.6% of drivers use a hand held mobile phone while driving, a proportion almost unchanged since 2002.[96]

"There is still an enormous gulf between what the law states – that handheld mobile phones should not be used behind the wheel – and what motorists see happening on our roads. Drivers are routinely using their phones at red traffic lights, or even while on the move. The number of drivers persisting in using a hand-held mobile phone at the wheel does not seem to be reducing. It is crucial that enforcement is at the top of the Government's agenda alongside attempts to deter use of hand-held phones at the wheel. The ultimate aim should be to make use of hand-held phones at the wheel to be seen by our society as equally socially unacceptable as drink driving."
Peter William, RAC Motoring Services, the UK

[96] Department for Transport (2015), Seat Belt and Mobile Phone Use Surveys: England and Scotland 2014, https://goo.gl/ZlKLvZ

France: devices attached to an ear forbidden while driving

To reduce the number of road deaths and injuries related to distraction, France introduced a law in 2015 prohibiting drivers to use any device attached to the ear while behind the wheel, independently of whether they are used for phone calls, listening to music or radio. Wireless systems, i.e. those that rely on a Bluetooth connection, are still legal.

Recommendations to Member States

- Conduct intensive enforcement actions on illegal use of mobile phone of one week duration at least twice a year, coupled with intensive publicity campaigns.
- Include illegal use of a mobile phone while driving in penalty point systems.

Recommendations to the EU

- Include best practice guidelines on illegal use of mobile phone use enforcement and sanctions to encourage member states to achieve high standards on enforcement methods and practices and a greater convergence of road safety related road traffic rules, building on the EC Recommendation on Enforcement in the field of Road Safety.
- Encourage member states to include data on distraction in their reporting to the European Commission's CARE database of road collisions.
- As vehicles increasingly offer automated driving functions, fund research to understand how cars will best hand control back to a driver who may be engaged in a distracting task and which tasks the driver should be permitted to engage in.

Recommendation to carmakers

- Publish test results that show in-vehicle information and infotainment systems comply with the EU's statement of principles on human-machine interface design. The guidelines state that systems "should be designed to support the driver and should not give rise to potentially hazardous behaviour".

PART V
THE CROSS BORDER ENFORCEMENT DIRECTIVE: WORK IN PROGRESS

In an increasingly mobile, integrated and enlarged EU, non-resident drivers make up an ever larger part of the traffic flow. There is evidence from different member states that non-resident drivers flout traffic laws when travelling abroad as they do not fear punishment.

A foreign-registered car is around three times more likely to commit a traffic offence than a domestically-registered one.

According to the European Commission, non-resident drivers account for approximately 5% of road traffic in the EU, but a foreign-registered car is around three times more likely to commit a traffic offence than a domestically-registered one. The Commission also gives the example of France, where speeding offences committed by foreign registered cars reach approximately 25% of the total, with the figure going up to 40-50% of the total during periods of high transit and tourism. The automated detection of a violation by safety cameras and automated identification of vehicles and owners are being used increasingly across the EU.[97]

In order to address the issue of non-resident road traffic offenders and guarantee the principle of non-discrimination, the EU adopted a Directive on Cross Border Enforcement 2015/413 (CBE)[98] which covers the main offences causing road death and serious injury in the EU.[99] The CBE Directive aims to facilitate the enforcement of financial penalties against drivers who commit an offence in a different EU member state to the one where the vehicle concerned is registered.

Enforcement is supported by EUCARIS, the European Vehicle and Driving Licence Information system, allowing member states to exchange vehicle and driving licence registration information.[100]

The CBE Directive is a tool that can help achieve greater compliance with traffic laws, improve road safety and ensure equal treatment of resident and foreign drivers by reducing the impunity of the latter.[101] However, it is for the member state where the offence is committed to decide on the follow-up and punishment for the traffic offence.[102] In case of non-payment of a fine, the Council Framework Decision on mutual recognition to financial penalties[103] enables a judicial or administrative authority to transmit a financial penalty directly to an authority in another EU country and to have that penalty recognised and executed.[104] Moreover, drivers who have

[97] European Commission (2010), Cross border enforcement, Memo 10/642, https://goo.gl/QIP1fd
[98] Directive (EU) 2015/413 of the European Parliament and of the Council facilitating cross-border exchange of information on road-safety-related traffic offences, http://goo.gl/JF1bAW
[99] Eight major road safety related offences are included in the text of the EU Directive: speeding; not using a seat belt; not stopping at a red traffic light or other mandatory stop sign; drink driving; driving under the influence of drugs; not wearing a safety helmet (for motorcyclists); using a forbidden lane (such as use of an emergency lane, a lane reserved for public transport, or a lane closed down for road works); illegally using a mobile phone, or any other communications device, while driving.
[100] ETSC (2015), Frequently Asked Questions EU Cross Border Enforcement Directive, http://goo.gl/rU1Tks
[101] ETSC (2015), Enforcement in the EU – Vision 2020, http://goo.gl/5NFGNW
[102] European Commission (2013), Road safety: Clamp-down on traffic offences committed abroad – FAQ, http://goo.gl/7IVilk
[103] Council Framework Decision 2005/214/JHA of 24 February 2005 on the application of the principle of mutual recognition to financial penalties, http://goo.gl/ApxVo0
[104] European Commission, Financial Penalties, http://goo.gl/2iDhyB

not paid a fine and return to the country in question may also face action – in the same way as a local resident with an unpaid fine.

According to the EC impact assessment, the full implementation of the CBE would save between 350 and 400 road deaths each year. A major reduction could be achieved in mitigating the three most risky behaviour offences of speeding, drink driving and non-use of seat belts.[105]

The European Commission website provides relevant information on traffic rules enforced in all 28 EU member states, related to the eight offences covered by the Cross Border Enforcement Directive, as well as a downloadable smartphone app.[106] Additionally, TISPOL has published a series of country driving guides, providing information about national traffic laws.[107]

The Directive's implementation date was May 2015. Three countries (the UK, Ireland and Denmark) have a later transposition deadline of May 2017. At the time of going to print, the Directive was already operational in 22 countries. 15 countries are both responding to request from other countries and searching for non-resident offenders and 7 just respond to requests from others but do not make searches. The EUCARIS application is not yet operational in Finland and Portugal. The application is under construction in the Czech Republic.[108]

5.1 Improvements needed at national level

Table 5 shows that the use of the Directive varies greatly among countries. Although they may record traffic offences committed by non-residents, countries do not necessarily send a ticket to the offender when he/she lives abroad.

The proportion of offences by non-resident road users is difficult to evaluate as only Belgium, France, Hungary, Lithuania, The Netherlands, Poland and Spain have sent data. Offences committed by foreign-registered vehicles represented 13% of all speeding offences detected by safety cameras over the period 2013-2015 in Poland. Differences in the proportion of non-resident drivers depend on the geographical position of the country (i.e. whether or not it is a transit country), the level of tourism in the country and the type of road section (international or local route).[109]

EUCARIS has set up a reporting tool allowing member states to automatically record the number of outgoing and incoming requests and responses. Only France, Hungary, Lithuania, The Netherlands, Poland and Spain provided data on the number of offences committed by non-residents followed up. Other countries have not yet collected the data or are not currently willing to make the data public. This makes it difficult to evaluate the effectiveness of the Directive.

As many as 99% of all offences committed by non-resident drivers detected by safety cameras were followed up in Hungary, 96% in the Netherlands. Only 8% were followed up by the Lithuanian authorities in 2015, 11% in Poland, 35% in Spain and 41% in France (Table 5).

[105] European Commission (2008), Commission Staff Working accompanying the Proposal for a Directive of the European Parliament and of the Council facilitating cross-border enforcement in the field of road safety, Full impact assessment, http://goo.gl/gLo6il
[106] European Commission, Going Abroad, http://goo.gl/XnWzlM
[107] TISPOL, Country Driving Guides, https://www.tispol.org/guides
[108] Latest information May 2016.
[109] European Commission (2008), http://goo.gl/gLo6il

Table 5. Number of automatically detected offences and the proportion of followed up offences

*Data include all non-resident offenders, also those from non-EU countries; the data did not distinguish between EU and non-EU residents. **Estimated number ***Provisional data, roads inside urban areas and the regions of Catalonia and Basque Country are excluded.

Country	Outgoing searches	Number of automatically detected speed offences committed by non-resident	Proportion of followed up offences (the letter was sent to the owner of the vehicle after committing the offence)	Proportion of followed-up offences that were paid	Latest year available
AT	Yes	n/a	n/a	n/a	
BE	Yes	290,606	n/a	59%	2014
BG	Yes	n/a	n/a	n/a	
HR	Yes	n/a	n/a	n/a	
FR	Yes	2,902,553	41%	71%	2014
DE	Yes	n/a	n/a	n/a	
EL	Yes	n/a	n/a	n/a	
HU	Yes	139,253	99%	27%	2015
IT	Yes	n/a	n/a	39%	2015
LV	Yes	n/a	n/a	n/a	
LT*	Yes	74,822	8%	n/a	2015
NL	Yes	595,630	96%	n/a	2015
PL**	Yes	143,910	11%	n/a	2015
SI	Yes	n/a	n/a	n/a	
ES***	Yes	283,124	35%	60%	2015
CY	No	n/a			
EE	No	n/a			
LU	No	n/a			
MT	No	n/a			
RO	No	n/a			
SK	No	n/a			
SE	No	n/a			
CZ	Under construction				
FI	Not operational				
PT	Not operational				
DK	Transposition date May 2017				
IE	Transposition date May 2017				
UK	Transposition date May 2017				

Hungary and the Netherlands: fully automated processing guarantees that almost all speeding offences committed by EU non-resident offenders are followed up

Hungary has achieved the highest level follow up of speeding offences committed by non-residents. In 99% of cases, a non-resident committing a speeding offence will get a letter informing them about the offence and requesting them to pay. When a safety camera detects a speeding offence, the vehicle registration/number plate and photo are sent automatically to the processing centre which, since the entry into force of the CBE Directive, searches for the owner/holder data and sends the information letter in the respective foreign language to the received address. If the Hungarian authorities get an incorrect answer or no reply from EUCARIS, they try several times until they receive the information. However, only 27% of the tickets sent to non-residents are paid. To improve the situation, Hungary, as part of the Salzburg forum, has asked EUCARIS to support them in increasing the number of fines being paid (see below).

In the Netherlands, the whole process of issuing fines for non-resident offenders is fully automated. The automated process includes detection of a speeding offence, licence plate recognition, request for the vehicle holder's information from another Member State via the EUCARIS system and processing the information letter.

Many factors may explain why an offence might not be followed-up by a letter and therefore remain unpunished:

- lack of human resources as non-resident search might need to be processed manually;
- enforcement of non-resident offenders might not be seen as a political priority;
- in some cases, it might be difficult to support the requirement of the CBE that the letter to the offender as well as the follow-up proceedings such as an appeal procedure have to be processed in the language of the offender;
- camera specifications might not have been updated to be able to recognise all vehicle registration plates valid in the EU;
- companies might not be willing to disclose the name of the employee driving the car at the time of the offence / car rental companies might be unwilling to name the driver;
- vehicle registration plates might sometimes be difficult to read because of bad weather.

Member states should provide the adequate human and financial resources to improve the level of follow-up of offences. The benefits soon outweigh the costs of follow-up as the system will finance itself from the revenues generated by the fines.

The proportion of followed-up offences committed by non-residents that were eventually paid varies greatly: from 66% in France, 60% in Spain, 59% in Belgium, 39% in Italy and as low as 27% in Hungary.

France: the follow-up of fines committed by non-resident offenders has been made a political priority

The number of non-resident offences recorded by automatic enforcement devices represented 25% of the total number of all automatically recorded offences in 2009 but in that year only 1% of those non-resident offences were followed up[110]. After bilateral agreements signed with a number of EU countries[111] the number of offences committed by non-residents slightly decreased in 2012 to represent 22% of the total number of all automatically recorded offences, with 17% of those being followed up. In 2015, 57% of speed offences committed by non-residents were followed up. Around 65% to 75% of the tickets were paid immediately. 25% to 30% of the remaining tickets were paid after the second notification.

Collision reports reveal that 5% of all deaths following a collision involved a vehicle from another EU country in 2013 (169 out of 3268 deaths) in France.[112]

France is currently discussing the idea of a virtual driving licence system for non-resident offenders, in order to guarantee equal treatment of all drivers. As is the case in Luxembourg already, foreigners committing traffic offences in France will get demerit points withdrawn from a 'virtual' French licence, which might result in vehicle confiscation once all points are lost. France is also planning to create a list of foreign drivers who have failed to pay traffic fines.

[110] Slide presentation CBE stakeholder meeting Paris.
[111] France signed bilateral cross border enforcement agreements with: Luxembourg in 2001, Switzerland in 2009, Belgium in 2012 Poland and Romania in 2015 and Italy in 2016.
[112] Source: PIN panellist.

Spain: 35% of non-resident offenders received a fine in 2015

Around 7% of all automatically-detected speeding offences were committed by non-residents in Spain in 2015. Preliminary results show that a ticket was sent in 35% of such cases in 2015 and 60% of those were eventually paid.[113] 53% of non-resident drivers come from countries that still do not provide driver information to Eucaris.

"It is crucial that all EU member states participate in the Eucaris platform. This would allow road traffic authorities to effectively tackle dangerous behaviour of non-resident offenders."

Concepción Guerrero Galán, Deputy Director of Enforcement Procedure, Directorate General for Traffic (DGT), Spain

Preliminary findings from the consultation documents on the upcoming evaluation study on Cross Border Enforcement Directive on behalf of the European Commission indicate that the efforts in implementing the Directive are starting to pay off.[114] Hungary and the Netherlands are showing the way. There is room for improvement in all the other countries to fully reap the road safety benefits offered by the Directive. The Directive will be most effective in following up offences which can be detected automatically, such as speeding and running red lights.[115] The development of new technologies might allow other offences to be detected automatically in the future.

EUCARIS will provide support for some members of the Salzburg forum

Upon request of Austria, Bulgaria, Croatia and Hungary EUCARIS is currently developing a service to support the follow up proceedings of non-resident offenders. The system will allow for the exchange of driver information between these countries (in case the country of the offence has driver liability). It will also facilitate the liaison between national authorities, if needed, in producing information letters and processing the financial penalty in case of no reply. Other member states will be able to join the service once in operation.

Recommendations to Member States

- Apply the Directive in full, setting targets for high level of follow-up of non-resident offenders and applying all means to reach the target as soon as possible.
- Raise awareness of EU citizens with regard to road safety traffic rules in force through organising regular information campaigns using partners such as NGOs and other road safety stakeholders linked to police enforcement.
- Regularly inform the European Commission of any changes to road safety related legislation so that this can be communicated reliably at an EU level.
- In case of non-payment apply the Council Framework Decision 2005/214.
- Support the recast of the Framework Decision 2005/214, especially if this provides the opportunity to include civil/administrative offences as this would provide an important final part in the enforcement chain.
- Support the preparation of best practice guidelines on road safety enforcement and the review of strengthening sanctions, as foreseen under Article 11 of the Directive.

[113] Roads inside urban areas and the regions of Catalonia and the Basque Country are excluded.
[114] To be published soon.
[115] ETSC, (2015) Frequently Asked Questions EU Cross Border Enforcement Directive, http://goo.gl/rU1Tks

5.2 Improvements at EU level: revising the Directive could provide a unique opportunity to complete the enforcement chain

Article 11 in the Cross Border Enforcement Directive includes a revision clause. This article obliges the European Commission to submit a report to the European Parliament and the Council on the application of the CBE Directive by November 2016. The study should evaluate the effectiveness of the Directive. It will also assess the EUCARIS application and needs for developing common standards for automatic checking equipment and procedures, and for strengthening the enforcement of sanctions and will propose common criteria concerning the follow up procedures in the case of non-payment of a financial penalty.

ETSC would welcome an adoption of guidelines based on the EC Recommendation on Enforcement in the field of Road Safety 2004/345 as a step forward. The EC Recommendation 2004/345 on enforcement has made a difference to traffic law enforcement in the EU countries. In the years immediately after its publication the Recommendation stimulated discussion and best practice exchange. Member states should continue the implementation of the Recommendation. In this Recommendation EU Member states are asked to apply, in a national enforcement plan, what is known to be best practice in the enforcement of speed, alcohol and seat belt legislation. The Recommendation also stresses that the follow-up of detected offences should be "effective, proportionate and dissuasive". Finally, the Recommendation includes the need to combine enforcement with information for the public, which will be given in the form of publicity campaigns aiming at making the public conscious of road safety and of the importance of complying with the rules. Moreover, the EU institutions should link into plans outlined by the European Commission Road Safety Policy Orientations 2011-2020, of which Objective 2 focuses on road safety enforcement strategy.

TISPOL's EC-funded Lifesaver programme which ran from 2008 to 2011 promoted a best practice exchange amongst EU Member states on road-safety-related policing. A new project called STRIDER was launched in 2015.

It is essential for the public perception of the enforcement chain that the Directive contributes the first steps to carrying through the entire chain to the end.

ETSC says that for the Directive to be truly effective it should require the State of Offence to notify offenders in accordance with their national legislation. Without a credible, workable end to the enforcement chain, the police and enforcement authority activity at the start of the chain risks losing its deterrent effect. This is the effect which police strive towards and ultimately aims to improve road safety. The impact of police enforcement does not end with the detection of the offence. In fact, the follow up is just as important, as research shows (ESCAPE 2003). This is also recognised in the EC Recommendation on enforcement which stresses that the follow up of detected offences should be "effective, proportionate and dissuasive." The diagram below shows the enforcement chain. The Cross Border Enforcement Directive should cover steps 1 to 4 and not stop at step 3.

Table 6: The enforcement chain[115]

	CrossBorder Enforcement Directive Proposal 2008					Framework Decision 2005/214
Step 1	**Step 2**	**Step 3**	**Step 4**	**Step 5**	**Step 6**	**Step 7**
Detection/ Registration of an offence	Identification of the vehicle	Identification of the Driver/ Owner	Notification of the Driver/ Owner	Refusal to Pay	Judicial Final Decision	Execution of the sanction

[116] ETSC (2011), Proposal for Directive "facilitating cross- Proposal for Directive "facilitating cross-border enforcement in the border enforcement in the field of road safety" Position of the European Transport Safety Council, http://goo.gl/GggleS

Non-resident drivers are still benefiting from impunity in too many member states as they never receive a letter requiring them to pay a fine after committing an offence. If they do, non-resident drivers might wait to see whether the country of the offence sends them a second letter. In case of non-payment of a fine, member states can follow up according to existing EU rules adopted under Council Framework Decision 2005/214 which covers judicial co-operation on cross-border financial penalties but the CBE Directive does not oblige them to do so.[117]

There is a growing need for a common EU standard for automated enforcement equipment. Technical specifications of safety cameras vary from country to country. Therefore, there is a risk that a sanction imposed in an EU Member State is challenged by a non-resident offender on the grounds that the checking equipment used to detect the offence did not comply with the specification of the country of residence of the offender.[118]

Recommendations to the EU

Within the context of the revision of Directive 2015/413 concerning cross-border exchange of information on road safety related traffic offences:

- Revise the Directive to strengthen the enforcement chain, including mandatory notification by the State of Offence in accordance with their national legislation.
- In case of non-payment of fines, encourage member states to apply the Council Framework decision 2005/214.
- Recast the Framework Decision 2005/214 to include civil/administrative offences as this would provide an important final part in the enforcement chain.
- Develop common minimum standards on enforcement equipment.
- Collect and publish EU countries' enforcement plans to facilitate the exchange of best practice on enforcement across the EU and work towards developing a common road safety enforcement strategy as outlined by the Road Safety Policy Orientations 2011-2020 under Objective 2. Continue exchanging best practice via the expert group on enforcement.
- Evaluate the barriers preventing a full implementation of the CBE Directive.
- Fund research on enforcement in order to develop effective enforcement strategies and tactics (building on the work of previous EU funded projects such as ESCAPE and PEPPER).
- To improve the reporting functionality of EUCARIS to report automatically to the European Commission the number of conducted and failed searches.

[117] Council Framework Decision 2005/214/JHA of 24 February 2005 on the application of the principle of mutual recognition to financial penalties, http://goo.gl/vgRi6t
[118] CBE consultation, preliminary GRIMALDI findings.

ANNEXES

ISO Country codes and number of inhabitants

Country	ISO Code	2010	2011	2012	2013	2014	2015
Austria	AT	8,351,643	8,375,164	8,408,121	8,451,860	8,506,889	8,576,261
Belgium	BE	10,839,905	11,000,638	11,094,850	11,161,642	11,203,992	11,258,434
Bulgaria	BG	7,421,766	7,369,431	7,327,224	7,284,552	7,245,677	7,202,198
Czech Republic	CZ	10,462,088	10,486,731	10,505,445	10,516,125	10,512,419	10,538,275
Denmark	DK	5,534,738	5,560,628	5,580,516	5,602,628	5,627,235	5,659,715
Germany	DE	81,802,257	81,751,602	80,327,900	80,523,746	80,767,463	81,197,537
Estonia	EE	1,333,290	1,329,660	1,325,217	1,320,174	1,315,819	1,313,271
Ireland	IE	4,549,428	4,570,881	4,582,707	4,591,087	4,605,501	4,628,949
Greece	EL	11,119,289	11,123,392	11,086,406	11,003,615	10,926,807	10,858,018
Spain	ES	46,486,619	46,667,174	46,818,219	46,727,890	46,512,199	46,449,565
France	FR(2)	64,658,856	64,978,721	65,276,983	65,600,350	65,889,148	66,415,161
Croatia	HR	4,302,847	4,289,857	4,275,984	4,262,140	4,246,809	4,225,316
Italy	IT	59,190,143	59,364,690	59,394,207	59,685,227	60,782,668	60,795,612
Cyprus	CY	819,140	839,751	862,011	865,878	858,000	847,008
Latvia	LV	2,120,504	2,074,605	2,044,813	2,023,825	2,001,468	1,986,096
Lithuania	LT	3,141,976	3,052,588	3,003,641	2,971,905	2,943,472	2,921,262
Luxembourg	LU	502,066	511,840	524,853	537,039	549,680	562,958
Hungary	HU	10,014,324	9,985,722	9,931,925	9,908,798	9,877,365	9,855,571
Malta	MT	414,027	414,989	417,546	421,364	425,384	429,344
The Netherlands	NL	16,574,989	16,655,799	16,730,348	16,779,575	16,829,289	16,900,726
Poland	PL	38,022,869	38,062,718	38,063,792	38,062,535	38,017,856	38,005,614
Portugal	PT	10,573,479	10,572,721	10,542,398	10,487,289	10,427,301	10,374,822
Romania	RO	20,294,683	20,199,059	20,095,996	20,020,074	19,947,311	19,870,647
Slovenia	SI	2,046,976	2,050,189	2,055,496	2,058,821	2,061,085	2,062,874
Slovakia	SK	5,390,410	5,392,446	5,404,322	5,410,836	5,415,949	5,421,349
Finland	FI	5,351,427	5,375,276	5,401,267	5,426,674	5,451,270	5,471,753
Sweden	SE	9,340,682	9,415,570	9,482,855	9,555,893	9,644,864	9,747,355
Great Britain	GB(1)	55,600,000	56,100,000	56,600,000	57,000,000	57,400,000	64,496,000
Serbia	RS	7,306,677	7,251,549	7,216,649	7,181,505	7,146,759	7,114,393
Israel	IL	7,695,100	7,836,600	7,984,500	8,134,500	8,296,900	8,464,100
Norway	NO	4,858,199	4,920,305	4,985,870	5,051,275	5,107,970	5,166,493
Switzerland	CH	7,785,806	7,870,134	7,954,662	8,039,060	8,139,631	8,237,666

Source: Eurostat, except in the case of Israel, data provided by the Panellist.

(1) Population data for England and Wales only as the data on number of checks or tickets are in most cases not available for Northern Ireland nor Scotland. England and Wales account for around 93% of total population in the UK.
(2) Population data include overseas areas.

Table 1 (Fig.1, Table 1 in the text) Total number of speeding tickets and number of those sent after an offence was detected by a safety camera

	2010		2011		2012		2013		2014		2015	
	Total number of speeding tickets	Speeding tickets from camera	Total number of speeding tickets	Speeding tickets from camera	Total number of speeding tickets	Speeding tickets from camera	Total number of speeding tickets	Speeding tickets from camera	Total number of speeding tickets	Speeding tickets from camera	Total number of speeding tickets	Speeding tickets from camera
BE	2,805,437	n/a	3,252,378	n/a	3,010,797	n/a	3,183,072	n/a	3,364,047	n/a	n/a	
CY	84,402	n/a	93,845	n/a	114,818	n/a	72,713	n/a	76,501	10,664	91,088	26,594
DK	274,694	234,655	283,619	240,586	260,742	218,552	332,731	290,068	261,908	210,203	415,533	377,841
EE	77,194	30,697	107,461	58,405	93,574	43,739	100,089	57,575	124,496	81,008	133,853	88,008
ES[1]	2,536,241	2,069,679	2,544,491	2,104,972	2,979,863	2,595,018	2,986,179	2,493,784	3,271,421	2,813,500	4,007,831	3,630,053
FI[2]	533,824	399,294	525,098	406,097	432,388	342,301	447,958	326,584	415,665	338,355	507,794	408,334
FR	10,096,626	9,059,730	10,741,848	9,649,052	12,589,223	11,557,352	11,527,436	10,593,787	12,836,313	11,941,725	13,619,586	12,728,539
EL	263,382	n/a	238,033	n/a	186,675	n/a	178,816	n/a	156,892	n/a	n/a	
HR	206,060	n/a	224,883	n/a	218,478	n/a	218,552	n/a	264,237	n/a	279,813	n/a
HU	538,667	n/a	429,224	429,224	453,208	406,459	297,744	230,219	285,636	216,443	275,433	234,208
IE	157,831	n/a	262,602	n/a	n/a	n/a	205,719	n/a	223,191	n/a	227,888	n/a
IT[3]	934,511	773,643	998,009	840,528	803,528	660,041	739,678	606,502	726,750	595,477	817,935	696,475
IT[3]*	1,463,910	n/a	1,416,276	n/a	1,397,850	n/a	1,470,455	n/a	2,777,503	n/a	2,659,205	n/a
LU	20,338	n/a	21,478	n/a	n/a							
LV	100,073	n/a	97,593	n/a	63,638	n/a	91,942	n/a	100,470	n/a	n/a	n/a
LT	119,856	118,524	87,591	85,924	89,046	87,009	120,342	118,038	148,864	146,318	146,347	143,651
MT	42,710	n/a	33,429	n/a								
NL	8,303,605	8,175,359	7,403,549	7,315,579	7,600,173	7,539,184	8,442,360	8,378,545	6,730,443	6,670,578	6,636,096	6,609,418
PL	1,318,970	n/a	1,551,811	35,000	1,633,986	126,000	1,750,467	262,000	2,102,005	427,000	1,918,959	328,000
PT	191,492	n/a	230,828	n/a	262,763	n/a	244,939	n/a	262,424	n/a	n/a	n/a
RO	936,366	25,705	1,074,976	32,679	764,440	19,222	869,200	21,024	775,615	4,552	754,422	n/a
SE	220,876	53,073	211,119	50,860	211,971	71,461	202,364	61,783	179,035	64,303	162,942	78,423
SI[4]	125,848	n/a	103,650	n/a	72,878	n/a	87,166	n/a	99,009	n/a	90,814	n/a
SK	240,334	n/a	263,905	n/a	n/a							
GB[5]	986,744	783,666	738,528	599,931	729,299	609,216	711,739	611,849	743,054	668,081	984,178	933,523
GB[6]	1,434,468	n/a	1,510,958	n/a	1,655,400	n/a	1,665,171	n/a	1,928,914	n/a	1,938,892	n/a
RS	149,128	n/a	110,516	n/a	116,968	n/a	140,018	n/a	178,817	n/a	264,785	n/a
IL	200,438	33,276	151,328	12,428	104,166	59,057	140,190	100,633	101,512	65,650	145,080	105,890
NO	n/a	127,396	n/a	107,721	n/a	98,630	n/a	95,764	n/a	93,123	n/a	90,524
AT	n/a											
BG	n/a											
CZ	n/a											
DE	n/a											
CH	n/a											

Source: National statistics provided by PIN Panellists or the Police in each country.

(1) Data on the number of speeding tickets on roads inside urban areas and in the region of the Basque Country are not available.
(2) Written warning letters and fines, petty fines and crime reports are included.
(3) Speed tickets following checks by national police only.
(3)* Speed tickets following checks by national police, Carabinieri and police in main cities (provincial capitals)
(4) Fines following traffic collisions are included as it was not possible to distinguish them from the data on speeding tickets.
(5) Number of speeding tickets for England and Wales only. Data on the number of tickets in Scotland and Northern Ireland are not available. Due to changes in reporting system, data prior to 2011 are not directly comparable with subsequent years.
(6) Total number of speeding tickets and the number of alternative sanctions imposed as an alternative to a speeding ticket in England, Wales and Northern Ireland. Due to changes in reporting system, data prior to 2011 are not directly comparable with subsequent years.

Table 2 (Fig.2) Number of safety cameras

	Total number in 2015 of						
	Mobile cameras	Fixed cameras	Time-over distance cameras	Empty speed camera boxes	Total number of safety cameras	Cameras per mln. inhabitants	Latest year available if not 2015
AT[1]	84	145	10	500	739	86	
BE[2]	272	394	44	1611	2321	206	2014
CY	0	2	0	0	2	2	
DK	100	0	0	0	100	18	
EE	0	42	0	25	67	51	2016
ES[3]	391	484	30	n/a	905	19	
FI	22	100	0	800	922	169	
FR	787	2180	100	886	3953	60	
HR	317	21	0	39	377	89	
HU[4]	160	365	0	13	538	53	2016
IE[8]	497	0	0	0	497	2	
IT[5]	193	81	379	103	756	12	
LV	4	16	0	0	20	10	
LT[6]	13	139	0	n/a	152	52	
NL	186	642	24	0	852	50	
PL	1912	400	29	0	2341	111	
RO[7]	596	0	0	10	606	30	
SE	15	1300	0	0	1315	135	
SI[8]	184	16	0	8	208	101	
GB[9]	600	3600	200	2800	7200	112	2014
IL	0	99	0	48	147	17	
NO	0	317	24	0	341	41	
CH[10]	185	577	1	n/a	763	93	2014
BG	n/a						
CZ	n/a						
DE	n/a						
EL	n/a						
LU	n/a						
MT	n/a						
PT	n/a						
SK	n/a						
RS	n/a						

Source: National statistics provided by PIN Panellists or the Police in each country.
Note: for one time-over-distance system there might be more than one camera in operation.

(1) AT - data available only for the cameras operated by the Federal Police.
(2) BE - data included in the figure should be considered as a minimum, as the numbers since 2014 have increased.
(3) ES - data on the number of safety cameras on roads inside urban areas and in the region of the Basque Country are not available.
(4) HU - 365 fixed cameras in 134 locations.
(5) IT - Cameras operated by national police and Carabinieri only. Data on the number of cameras operated by the local police operating in cities are not available.
(6) LT - only data on camera operating on national roads are available.
(7) RO - only data on safety cameras operated by national Police are available.
(8) IE, SI - mobile camera and laser guns together.
(9) GB - estimates based on past surveys and expert knowledge. Data on the number of safety cameras are available for England and Wales only.
(10) CH - data on the number of fixed camera include empty boxes, as it is not possible to distinguish those.

Table 3 (Fig.3, Table 2 in the text) Total number of roadside alcohol breath tests and proportion of those tested found above the legal limit.

	2010		2011		2012		2013		2014		2015	
	Total number of alcohol road side breath tests	Number of those above legal limit	Total number of alcohol road side breath tests	Number of those above legal limit	Total number of alcohol road side breath tests	Number of those above legal limit	Total number of alcohol road side breath tests	Number of those above legal limit	Total number of alcohol road side breath tests	Number of those above legal limit	Total number of alcohol road side breath tests	Number of those above legal limit
AT	1,025,302	37,519	1,418,363	40,234	1,642,790	38,622	1,765,526	35,404	1,817,375	33,418	1,624,279	26,327
BE	n/a	56,231	n/a	52,056	n/a	46,209	n/a	48,141	n/a	47,041	n/a	
CY	174,584	9,306	172,442	8,479	151,654	11,261	126,506	9,141	118,506	7,926	113,937	7,980
CZ	n/a	13,268	n/a	12,777	n/a	11,037	n/a	9,729	n/a	10,146	n/a	n/a
EE	140,096	932	n/a	8,564	471,475	8,429	620,309	7,992	752,518	7,894	889,701	7,889
ES[1]	5,778,723	121,108	6,838,800	137,436	6,922,723	130,301	6,928,573	127,503	6,776,696	120,246	6,141,507	101,617
FI	1,104,543	10,499	1,182,219	12,091	945,719	12,122	808,790	11,793	1,558,924	14,019	1,526,508	14,835
FR	10,892,996	375,487	11,155,304	386,828	10,935,180	352,014	10,517,148	322,694	10,838,743	319,264	10,120,062	293,730
EL	1,818,849	38,033	1,762,341	35,006	1,731,670	30,707	1,798,898	30,853	1,811,108	29,597	n/a	
HR	n/a	35,616	n/a	39,227	n/a	38,193	n/a	39,402	n/a	39,960	n/a	43,000
HU	1,204,251	43,477	1,173,660	34,137	1,238,563	25,567	1,196,657	23,133	1,222,987	23,634	1,333,497	20,126
IT[2]	1,655,624	54,757	1,814,952	56,819	1,794,977	49,407	1,716,547	44,489	1,599,750	38,369	1,535,586	38,053
LV	n/a	4,093	n/a	4,196	n/a	4,354	n/a	4,312	n/a	4,136	n/a	
LT	130,751	3,572	252,741	4,960	159,507	3,402	163,915	3,545	153,632	2,887	139,963	2,574
MT	146	68	n/a									
PL	3,351,776	165,885	5,679,959	183,488	7,383,915	171,020	8,917,980	163,777	15,414,183	141,203	17,701,833	128,996
PT	1,130,981	43,107	1,172,445	50,127	1,401,318	55,663	1,559,873	53,593	n/a		n/a	
RO	n/a	37,219	n/a	36,399	n/a	16,009	1,500,917	15,150	1,462,415	23,615	1,435,020	26,505
SE	2,680,991	16,854	2,441,583	16,676	2,423,321	14,856	2,234,581	13,247	1,977,647	12,744	1,263,439	12,565
SI	408,447	19,127	386,284	17,501	330,315	12,918	379,669	14,226	384,198	13,883	321,885	11,645
SK	n/a	6,713	n/a									5,595
GB[3]	736,846	84,436	685,992	80,761	686,346	76,179	676,353	70,675	606,775	66,666	n/a	n/a
RS	n/a	48,339	n/a	51,538	n/a	55,585	n/a	50,533	n/a	51,158	n/a	57,926
IL	940,340	9,587	n/a	8,813	n/a	8,595	n/a	9,949	n/a	11,470	n/a	8,442
NO	1,783,702	4,318	n/a									
BG	n/a											
DE	n/a											
DK	n/a											
LU	n/a											
NL	n/a											
CH	n/a											

Source: national statistics provided by PIN Panellists

(1) Checks on roads inside urban areas and in the region of the Basque Country are not available. Data for checks in Catalonia include urban areas.
(2) Alcohol road side breath tests by national police and Carabinieri only. The number of tests done by local Police operating in cities is not available.
(3) Number of alcohol roadside breath tests and population data for England and Wales only. The figure for the number found to be above the legal limit includes those who refused to take the breath test. Due to changes in reporting system, data prior to 2011 are not directly comparable with comparable with subsequent years.

Table 4 (Fig.4) Road deaths attributed to drink driving and the difference between the average annual percentage change in the number of road deaths attributed to alcohol and the corresponding reduction for other road deaths

Number of deaths attributed to drink driving cannot be compared between countries, as there are large differences in the way in which countries define and record them.

							Difference between the average annual% change in the number of road deaths attributed to alcohol and the corresponding reduction for other road deaths (2010-2015)	
	2010	2011	2012	2013	2014	2015	Fig. 4	
AT	32	51	39	31	32	n/a	1.4%	2010-2014
BE–	49	46	46	35	24	n/a		
CY	26	25	19	9	13	12	-15.5%	
CZ	108	100	50	56	68	n/a	-6.7%	2010-2014
DE	342	400	338	314	260	n/a	-4.6%	2010-2014
DK	64	53	24	41	38	26	-8.0%	
EE	16	22	17	23	16	15	0.6%	
ES(1)	265	230	216	161	161	n/a	-5.9%	2010-2014
FI	64	74	43	57	41	50	-4.2%	
FR	1,230	1,220	1,130	952	958	1,056	-1.4%	
EL	88	101	100	94	76	n/a	9.1%	2010-2014
HR	152	151	147	96	91	113	-11.3%	
HU	61	57	52	49	47	48	-3.2%	
LU	11	11	9	8	6	n/a		
LV	22	26	25	10	29	12	-10.1%	
LT	32	28	29	32	49	15	0.3%	
NL	18	n/a						
PL	271	325	305	292	260	218	0.4%	
PT	242	228	193	168	140	n/a	-2.3%	2010-2014
RO	194	164	224	166	181	163	2.0%	
SE(1)	17	18	24	19	16	26	9.0%	
SI	49	35	43	38	25	37	-3.9%	
SK	26	37	32	23	38	34	10.4%	
GB	240	240	230	230	240	n/a	2.0%	2010-2014
RS	43	58	73	62	50	n/a	9.69%	2010-2014
IL	14	10	9	9	6	10	-10.3%	
NO(2)	28	13	17	17	15	n/a	-4.0%	2010-2014
CH	63	53	57	48	29	n/a	-9.3%	2010-2014
BG	n/a							
IE	n/a							
IT	n/a							
MT	n/a							

Source: national statistics provided by PIN Panellists for each country using each country's own method of identifying alcohol related deaths. See Table 6 Country definition of road deaths attributed to alcohol.

BE– Road deaths attributed to drink driving are known to be largely underestimated. Level of underestimation increased in 2015 following a decrease in collision reporting by the Police.

(1) Killed car drivers who were tested positive in port-mortem blood alcohol test.
(2) Road deaths in collisions involving at least one drunk driver or pedestrian.

Table 5 National definition of deaths attributed to drink driving

SafetyNet recommended definition: any death occuring as a result of road accident in which any active participant was found with blood alcohol level above the legal limit.

	National definition of deaths attributed to drink driving if different to the SafetyNet recommended definition
Austria	SafetyNet recommended definition. However killed road users are not tested for alcohol unless the prosecutor requires it.
Belgium	Driver under the influence of alcohol and drivers who refuse to be tested. Drivers killed on the spot might not be tested.
Cyprus	SafetyNet recommended definition.
Croatia	SafetyNet recommended definition. However, drivers or other killed persons on the spot might not be tested.
Czech Republic	SafetyNet recommended definition.
Denmark	SafetyNet recommended definition.
Estonia	Deaths occurring as a result of a road collision in which at least one driver was found with blood alcohol level above 0.5g/l (legal limit is however 0.2 g/l).
Finland	People killed in a road accident where one or more of the motor vehicle drivers or riders involved has had blood alcohol level above 0.5g/l or 220 microgrammes of alcohol per litre of breath.
France	SafetyNet recommended definition. BAC test are conducted in approximatively 80% of the fatal crashes that are registered in the crash database. Analyses are only performed on accidents for which BAC level is provided for all drivers.
Germany	SafetyNet recommended definition. However, drivers killed on the spot might not be tested.
Greece	Deaths in collisions where a driver was found with blood alcohol level above the legal limit. In practice, however, the Police is not systematically testing drivers for alcohol.
Hungary	Killed car drivers who tested positive in post-mortem blood alcohol tests. Drivers are only tested if they are assumed to be responsible for the collision.
Ireland	SafetyNet recommended definition.
Israel	SafetyNet recommended definition.
Italy	SafetyNet recommended definition. In practice, it seems however that deaths are often attributed to drink driving only when alcohol is considered by the Police officer to be the unique contributory factor of the fatal accident.
Latvia	Deaths occurring as a result of road accident in which at least one driver (excluding moped riders and cyclists) was found with blood alcohol level above the legal limit (0.2 g/l for novice drivers, 0.5g/l for all other drivers).
Lithuania	Deaths occurring as a result of a road collision in which at least one driver was found with blood alcohol level above the legal limit (0.2 g/l for novice and professional drivers, 0.4 g/l for all other drivers).
Luxembourg	From 2001 to 2009: killed persons of accidents where the police suspected the presence of alcohol. As from 2010 on we use SafetyNet recommended definition.
Malta	n/a
The Netherlands	Drivers killed on the spot might not be tested.
Norway	n/a
Poland	SafetyNet recommended definition.
Portugal	SafetyNet recommended definition.
Serbia	No standard national definitions of drunk driving. Anyone driving under the influence of alcohol above legal limit (0.03 mg/ml*) is considered to be drunk. *Except for specific road users for which legal limit of alcohol is 0.00 mg/ml (eg. novice drivers, professional drivers, two-wheeler drivers and etc.).
Romania	Anyone driving under the influence of alcohol above legal limits is considered to be drink driving. (legal limit is 0.0 g/l). It is definition resulting from interpretation of the low.
Slovakia	Killed people in fatal collision where alcohol was considered by the Police officer to be one of the main contributing factor.
Slovenia	Deaths occurring as a result of a road traffic accident in which a couser of the traffic accident was found with blood alcohol level above 0.5g/l.
Spain	Killed car drivers who tested more than 0.3 g/l in post-mortem blood alcohol tests.
Sweden	Killed car drivers who tested positive (BAC > 0.2) in post-mortem blood alcohol tests.
Switzerland	SafetyNet recommended definition.
Great Britain	People killed in a collision where one or more of the motor vehicle drivers or riders involved either refused to give a breath test specimen when requested to do so by the police (other than when incapable of doing so for medical reasons), or one of the following: a) failed a roadside breath test by registering over 0.35g/l of alcohol in their breath. b) died and was subsequently found to have more than 0.8g/l of alcohol in their blood. The current drink drive limit in England and Wales is 80mg per 100ml of blood. The drink drive limit in Scotland was reduced on 5th December 2014 from 80mg per 100ml of blood to 50mg per 100ml of blood.

Source: Definition provided by the PIN Panellists in each country.

Table 6 Seat belt wearing rates in front and rear seats 2010-2015

	Front seat			Rear seats		
	2010	2015		2010	2015	
AT	89%	93%	2011-2015	66%	88%	2009-2015
BE	n/a	92%		n/a	86%	
CZ	97%	95%		69%	98%	
DK	92%	96%	2010-2014	71%	85%	2010-2014
DE	98%	98%	2009-2014	97%	98%	2010-2014
EE		98%		64%	82%	
FI	92%	94%		84%	88%	
HR	n/a	61%		n/a	1%	
HU	n/a	83%		n/a	56%	
IE	89%	94%	2009-2015	90%	81%	2011-2015
IT	n/a	62%		n/a	15%	
LV	n/a	80%		40%	51%	
LT	n/a	96%	2010-2014	n/a	33%	2010-2014
PL	n/a	96%		n/a	76%	
PT	n/a	96%		n/a	77%	
SE	96%	98%		81%	93%	
GB[1]	95%	98%	2010-2014	89%	91%	2010-2014
NO	n/a	96%		n/a	n/a	
RS	n/a	74%		n/a	7%	
IL	94%	96%	2010-2014	70%	74%	2010-2014
CH	89%	93%		74%	76%	

Source: national statistics provided by PIN Panellists.

[1] Seat belt wearing rates for England and Scotland only.

Table 7 (Fig.7, Table 3 in the text). Total number of seat belt tickets.

	Seat belt tickets					
	2010	2011	2012	2013	2014	2015
AT	136,200	147,016	143,613	131,408	129,118	103,214
BE	123,564	112,770	86,093	99,733	102,465	n/a
CY	20,657	20,865	25,315	13,120	10,813	10,920
CZ	n/a					20,220
DK	43,110	41,168	37,728	38,309	32,301	27,097
EE	18,412	10,648	14,133	9,858	8,063	6,333
ES	131,348	163,806	145,964	135,907	121,032	n/a
FI	24,953	27,643	21,375	18,371	16,549	16,360
FR	280,803	268,578	260,969	229,578	190,885	171,507
EL	49,703	37,120	33,722	35,478	34,526	n/a
HR	76,475	82,044	76,385	81,669	91,467	96,403
HU	51	3,968	n/a	67,525	69,193	38,678
IE	17,383	15,723	13,834	12,024	11,513	10,831
IT(1)	184,138	170,552	218,524	176,554	174,397	189,106
LU	3,103	2,964	n/a			
LV	35,520	35,601	n/a	30,110	27,011	n/a
LT	36,457	23,864	22,955	23,449	21,182	21,727
NL	187,612	108,093	65,414	72,946	62,521	20,399
PL	396,232	371,388	373,247	382,953	433,082	404,917
PT	43,297	43,948	41,554	33,000	33,701	n/a
RO	590,038	565,467	459,333	589,042	485,763	467,950
SE(2)	37,739	33,778	28,239	24,988	20,007	14,345
SI	63,990	52,970	45,413	46,198	49,023	40,468
SK	13,186	8,591	n/a	n/a	n/a	15,743
GB(3)	176,403	140,900	116,727	75,348	35,572	29,360
RS	99,287	91,291	91,939	115,096	127,632	178,771
IL	265,547	211,227	49,108	61,177	64,762	88,370
NO	30,043	25,767	n/a			
BG	n/a					
DE	n/a					
MT	n/a					
CH	n/a					

Source: national statistics provided by PIN Panellists.
(1) Italy: Tickets following checks by national police, Carabinieri and police in main cities (provincial capitals).
(2) Sweden: Tickets for failure to use a seat belt use on front seat passengers only.
(3) Data for tickets following checks in England and Wales only. Due to changes in reporting system, data prior to 2011 are not directly comparable with subsequent years.

Table 8 (Table 4 in the text, Fig.8). Total number of tickets for illegal use of a mobile phone.

	2010	2011	2012	2013	2014	2015
AT	128,221	149,081	148,594	137,554	130,621	109,028
BE	124,632	132,721	120,004	118,656	121,348	n/a
CY	22,807	25,658	25,253	12,218	9,735	10,205
DK	37,480	41,647	43,597	48,044	44,298	41,108
EE	n/a	1094	2395	1356	845	1475
ES	197,363	203,259	192,385	200,534	198,396	n/a
FI	8167	8731	7915	6610	5801	7424
FR	507,342	509,372	487,822	438,814	374,525	343,829
EL	18,603	18,603	18,753	24,121	23,459	n/a
HR	19,850	22,137	24,504	31,772	40,425	38,988
HU	n/a	n/a	n/a	38,629	43,158	25,260
IE	34,635	33,422	30,783	28,938	30,524	28,771
IT[1]	194,151	211,433	189,445	154,511	142,715	148,670
LT	15,529	19,723	27,872	23,790	20,581	20,691
NL	140,437	100,574	63,551	69,570	67,351	33,084
PL	48,937	58,179	71,101	89,812	120,588	119,548
RO	65,051	68,015	65,996	84,606	78,586	72,432
SI	19,719	18,214	19,488	19,363	22,672	19,894
SK	n/a	n/a	n/a	n/a	n/a	19,679
GB[2]	124,728	123,137	92,665	52,364	29,749	88,695
RS	21,546	20,950	21,959	25,395	30,919	34,130
IL	107,208	104,178	100,262	71,393	57,751	61,753
NO	20,848	19,937	19,951	18,243	17,287	17,680
CH	n/a					
BG	n/a					
CZ	n/a					
DE	n/a					
LU	n/a					
LV	n/a					
MT	n/a					
PT	n/a					
SE	n/a					

Source: national statistics provided by PIN Panellists.

(1) Tickets following checks by national police, Carabinieri and police in main cities (provincial capitals).
(2) Number of tickets for illegal use of mobile phone following checks in England and Wales only. Due to changes in reporting system, data prior to 2011 are not directly comparable with subsequent years.

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